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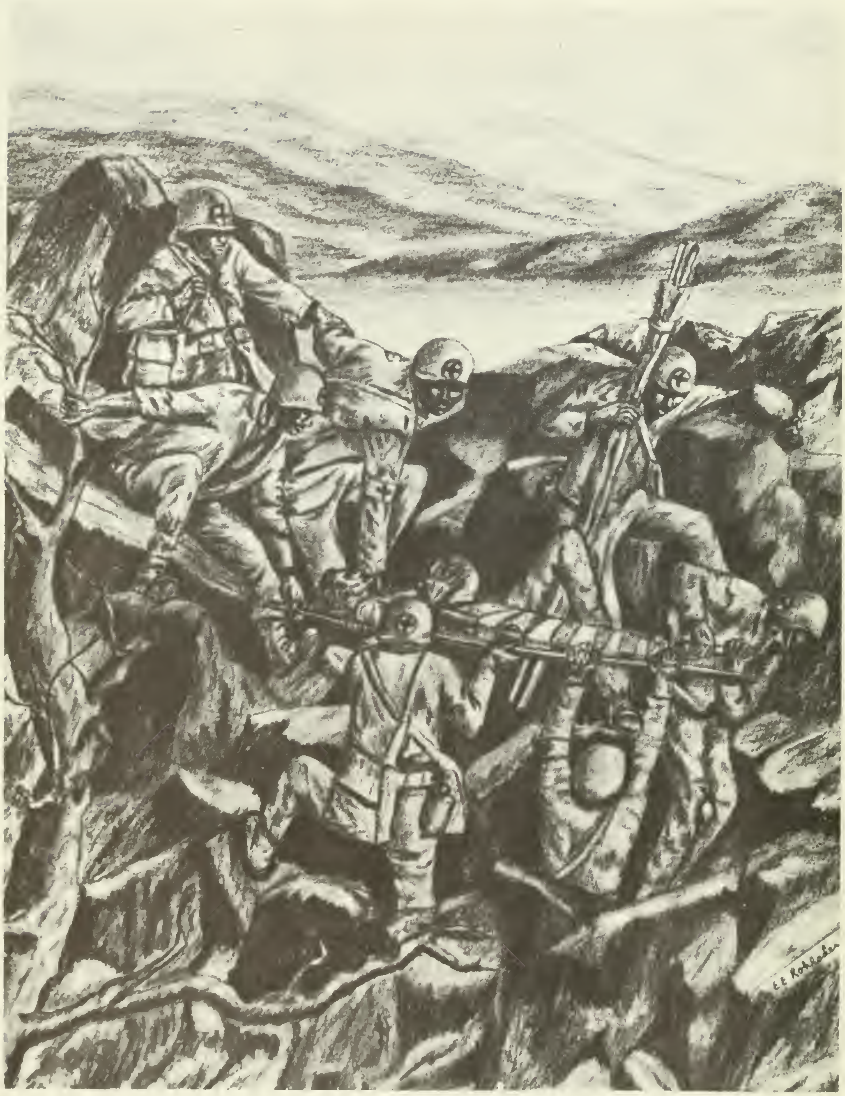
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. . . THE UNSUNG HEROES OF THE WAR . . .

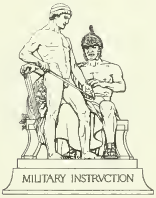
UNITED STATES ARMY IN WORLD WAR II

The Technical Services

THE MEDICAL DEPARTMENT: MEDICAL SERVICE IN THE MEDITERRANEAN AND MINOR THEATERS

by

Charles M. Wiltse



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History of

THE MEDICAL DEPARTMENT

prepared under the direction of Lt. Gen. Leonard D. Heaton
The Surgeon General, U.S. Army

Hospitalization and Evacuation, Zone of Interior

Medical Service in the Mediterranean and Minor Theaters

Medical Service in the European Theater

Medical Service in the Asiatic–Pacific Theater

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. . . to Those Who Served

Foreword

Improvements in medical practice and in standards of living in the U.S. Army in World War II meant for the American soldier better medical service than during any previous war. Improved techniques in the treatment of wounds and in the prevention and cure of disease went far toward preserving the lives and bodies of Army men and women both at the fighting fronts and in the bases and lines of communication that led to them. The author in this volume tells first about the medical provisions for the Atlantic outposts of the United States established before the substantial deployment and engagement of Army forces in Mediterranean and European areas, and then devotes major attention to the Army medical service in the Mediterranean campaigns in North Africa, Sicily, the mainland of Italy, and southern France. An appendix suggests some similarities and contrasts between German and American practice during the war.

The book is a natural sequel to one published in this series in 1956 entitled, *The Medical Department: Hospitalization and Evacuation, Zone of Interior,* and is to be followed by two dealing with medical service in the European Theater of Operations and in Pacific-Asiatic areas. Other related volumes are being published in the series, "Medical Department United States Army in World War II." While the author of this work has addressed himself primarily to the interests and needs of the military student and reader, a wider audience should find in his account both practical lessons in the provision of mass medical care and assurance that such care was adequately given to those who fought in the largest of American wars.

Washington, D.C.
23 September 1963

HAL C. PATTISON
Brigadier General, USA
Chief of Military History

Introductory Note

The invasion of North Africa on 8 November 1942 was the first ground offensive for U.S. troops against the European Axis Powers, and so the beaches of Algeria and Morocco, the barren hills and dry wadies of Tunisia, became the proving grounds for equipment, for tactics, and for men. From North Africa the battle line moved up to Sicily, to Italy, and into southern France, but for the Medical Department the Mediterranean remained a "pilot" theater whose accumulated experience saved countless lives on other fronts. Medical units that had served well in the static warfare of World War I were modified or discarded on the basis of their performance in the Mediterranean. New techniques, such as the treatment of psychiatric casualties in the combat zone, and the use of penicillin in forward surgery, were tested. The smaller, more mobile field and evacuation hospitals became the workhorses of the theater. Jeeps fitted with litter racks served as front-line ambulances, while transport planes, their cargoes delivered at forward airfields, were pressed into service to evacuate the wounded.

In the grand strategy of the war the bloody Italian campaign was a diversion, to engage as many enemy troops as possible with the smallest possible commitment of Allied strength. This meant, for the combat troops, being always outnumbered. It meant over and again, for medical and line commanders alike, giving up formations with priceless battle experience in exchange for willing but untried replacements. In physical terms the theater imposed the extremes of desert, marsh, and mountain barrier; of exposed plains crossed by swollen rivers; and the hazards of rain, snow, sleet and mud, each demanding of the supporting medical complements revised techniques and new expedients. In no other American combat zone was there anything comparable to the desert warfare of Tunisia, to the long martyrdom of Anzio, or to the bitter ridge-by-ridge encounters of the Apennines. Small wonder that the medical service described in these pages was often improvised and always pushed to the very limit of its means, yet nowhere did the Medical Department attain a higher level of effectiveness.

The author of *Medical Service in the Mediterranean and Minor Theaters,* Charles M. Wiltse, is a graduate of West Virginia University, earned his Ph. D. at Cornell, and holds an honorary Litt. D. from Marshall University. In addition to numerous articles, essays, reviews, and government reports, Dr. Wiltse is the author of *The Jeffersonian Tradition in Amer-*

ican Democracy; of a three-volume historical biography of John C. Calhoun, completed with the aid of two Guggenheim Fellowships; of a volume in the "Making of America" series, *The New Nation: 1800–1845;* and is co-author of the official War Production Board history, *Industrial Mobilization for War.*

Washington, D.C.
23 September 1963

LEONARD D. HEATON
Lieutenant General, U.S. Army
The Surgeon General

Preface

Medical Service in the Mediterranean and Minor Theaters is one of three volumes dealing with the overseas administrative history of the United States Army Medical Department in World War II. Companion studies will deal respectively with the European Theater of Operations and the war against Japan in the Pacific and China–Burma–India Theaters. These volumes differ from the more extensive clinical series, separately published by the Office of The Surgeon General, in that they are concerned primarily with the support given by the Medical Department to the actual combat operations: the collection of the wounded on the battlefield; the establishment of hospitals; the chain of evacuation from the point of contact with the enemy back to the communications zone and on to the zone of interior; and the methods and problems of medical supply in the field. Clinical matters, such as the incidence of disease, the types of wounds predominating, and problems of sanitation, are subordinated to the less technical story of the Medical Department in action. The administrative volumes thus relate both to the general combat history told elsewhere in the series UNITED STATES ARMY IN WORLD WAR II and to the medical story proper recorded in the 40-odd volumes of the clinical series appearing under the imprint of the Office of The Surgeon General. They are complemented by Clarence McKittrick Smith's *Hospitalization and Evacuation, Zone of Interior;* and by four functional volumes, being published by the Office of The Surgeon General, which deal respectively with *Organization and Administration of the Medical Department, Personnel, Training,* and *Medical Supply.*

The manuscript of this volume was submitted in draft form to a substantial cross section of those who participated in the actions described. Those who offered substantiation, corrections, or additions were: Abram Abeloff, M.D.; Lt. Col. James J. Adams, MSC; William H. Amspacher, M.D.; Col. Richard T. Arnest, MC, USA (Ret.) ; Col. Rollin L. Bauchspies, MC, USA (Ret.); Col. Charles H. Beasley, MC, USA (Ret.) ; Austin W. Bennett, M.D.; Lt. Col. Stephen D. Berardinelli, MC; Col. Daniel J. Berry, MC, USA (Ret.) ; Frank B. Berry, M.D.; Col. Albert A. Biederman, MC; Col. Charles O. Bruce, MC; Col. Gordon G. Bulla, MC, USAF; J. P. Cameron, M.D.; Col. Joseph Carmack, MSC, USA (Ret.) ; Lt. Col. Dan Crozier, MC; Brig. Gen. Henry C. Dooling, MC, USA (Ret.); Col. Daniel Franklin, MC, USA

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Sections of the volume dealing with strictly military events were checked by knowledgeable members of the Office of the Chief of Military History (OCMH) staff, including Martin Blumenson, Ernest F. Fisher, Jr., and Robert Ross Smith. If the combat narrative lacks at any point in accuracy, it is through no fault of these conscientious reviewers.

The manuscript was read in its entirety by Dr. Donald O. Wagner, former Chief Historian, The Historical Unit, U.S. Army Medical Service (USAMEDS), before his retirement early in 1960; by Col. John Boyd Coates, Jr., Director of The Historical Unit; and by Dr. Stetson Conn, Chief Historian, Office of the Chief of Military History. Each of these critics offered pertinent and valuable suggestions for improvement.

Mr. William K. Daum did much of the research for chapters I and II and prepared preliminary drafts of both.

For expert and unfailing aid in locating and procuring the thousands of documentary sources on which the work is based, the author makes special acknowledgment to Mrs. Josephine P. Kyle, former chief of the General Reference and Research Branch of The Historical Unit, and to her assistant, the late Mrs. Eleanor Alfonso, whose cheerful willingness never faultered despite the constant presence of fatal illness. Mrs. Kyle's successors, Maj. Albert C. Riggs, Jr., MSC, and Mr. Roderick M. Engert, did not participate until the book had reached the stage of review and final revision, but both were unstinting of their time and expert knowledge.

The author is also indebted to the Medical Statistics Division, Office of The Surgeon General, and especially to Mr. Carroll I. Leith, Jr.,—himself a veteran of the Mediterranean campaigns—who verified figures and tabulations, and in many instances proposed better ways of presenting them.

Preliminary editorial work was done by Mrs. Cyrilla E. Hickey of The Historical Unit, USAMEDS, and the final publications editing by Miss Mary Ann Bacon of OCMH. Copy editor for the volume was Mrs. Marion P. Grimes. The book is undoubtedly the better for having passed through the capable hands of these three editors. The excellent medical situation maps that make the text so much easier to follow were prepared by Miss Elizabeth P Mason, assisted by Miss Jean A. Saffran, both of The Historical Unit, USAMEDS. The photographs were selected by the author. The index was compiled by Susan Stevens New.

Washington, D.C.
23 September 1963

CHARLES M. WILTSE

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MEDICAL SERVICE IN THE MEDITERRANEAN AND MINOR THEATERS

PROLOGUE

The Gift of Life

The soldier struck down on the field of battle, if his wounds are more than superficial, may count his life expectancy in hours, or even minutes, unless he receives prompt medical aid. To give him that succor, and with it the gift of life, is the responsibility of the Army Medical Service, still called in World War II the Medical Department. Most of those whose wounds are not immediately mortal may be saved if the flow of blood is quickly stanched, the onset of infection halted, the effects of shock minimized, and, above all, if the casualty is speedily but gently moved to a place of safety where needful surgery can be performed. These "ifs" are many, but all of them fall within the medical mission. Each has its place in one of the most smoothly functioning organizations ever devised. So well did the Medical Department do its work in the Mediterranean theater that the chances of surviving battle wounds were 27 to 1: of 112,000 wounded, only 4,000 died.[1]

The cry "Medic!" uttered by a wounded man, or by a fellow soldier who has paused long enough to mark the spot, sets the machinery in motion and begins the chain of evacuation, officially defined as "the entire group of successive installations engaged in the collection, transportation, and hospitalization of the sick and wounded." If the casualty is conscious and has some mobility, he may help himself with antiseptics from his own first aid packet, or perhaps a tourniquet fashioned of a handkerchief or of a strip torn from his clothing. If he cannot help himself, and the tide of battle leaves no one else nearby, he waits. It will not be for long. A company aidman will soon be there, guided by voice, by some conspicuous marker such as a rifle stuck upright in the ground or a helmet hung from a low branch, or by instinct sharpened through months of combat. To illustrate the process, let us assume a case in which the wound is abdominal and severe, and let us say that the wounded man has applied sulfanilamide crystals and a dressing before consciousness begins to fade.

The wounded soldier will probably be found in ten to thirty minutes, depending on the movement of the battle, the number of wounded, the nature of the terrain, and similar factors. The aidman (there were normally two such men attached to each infantry company in World War II) is trained as a surgical technician. He has earned by repeated demonstrations of selflessness and endurance the respect he receives from his fellow soldiers. His mere presence in the company is a morale builder, because the men know that as long as "Doc" is there, they will not be left to die on the battlefield.

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[1] These figures do not include 35,000 killed in action, 20,000 taken prisoner, nor some 9,000 missing. All of these, by definition, were "battle casualties," but did not come within the purview of the Medical Department.

In this hypothetical case, a quick check is enough to tell the aidman the casualty is in shock. He calls at once for one of the four-man litter squads already moving out from the battalion aid station some 500–800 yards to the rear, where water and a measure of natural protection are available. Although he carries morphine, he will not use it because the casualty is unconscious. If it is toward the latter part of the Italian campaign, however, he will have plasma with him, which he begins to administer without delay. When the needle is taped in place and the flask suspended, perhaps from the same rifle butt that guided him to the spot, the aidman will check the wound, replacing the dressing if it seems necessary, and perhaps adding tape to make transportation easier. He then fills out an Emergency Medical Tag (EMT), copying the man's name and serial number from his dog tag, and indicating the nature of the wound, the approximate time it was inflicted, and the treatment so far given. The EMT is conspicuously attached to the patient and will go with him along the whole chain of evacuation.

By this time the litter bearers have reached the scene. The litter bearers, along with the aidmen, are the unsung heroes of the war. They have no weapons save strength, courage, and dedication beyond the call of duty; they have no protection save a steel helmet painted front and back with the red cross, and a red cross brassard on the sleeve; yet they move among fighting men and whining shells on the battlefield, concerned only for the safety and comfort of the man they lift so carefully onto a litter and carry so gently, avoiding any unnecessary jar or change of angle, back to a place of relative security—for the casualty but not for them. They will return at once to the battlefield.

At the battalion aid station, the wounded man will be examined for the first time by a medical officer, generally the battalion surgeon. Perhaps an hour has now passed since the wound was inflicted. The man is still alive, thanks to the plasma given him on the field, but he will not be for long without extensive surgery. If the battle is strongly contested—and what battle was not, in that "forgotten theater"?—there will be many casualties at the aid station, brought in from the various companies of the battalion by the four litter-bearer squads available or walking if their injuries permit that luxury. Let us assume that the case we are following is the most serious, and so receives the immediate attention of the battalion surgeon. In this late stage of the war, the other officer at the aid station will be nonmedical, generally Medical Administrative Corps, whose duties will include first aid, but will be primarily to keep the wounded moving—to hospitals farther to the rear if hospitalization is indicated, or back to the front with a bandage if the wound is slight. Manpower is never so plentiful that it can be dissipated by evacuating men still able-bodied. In addition to the litter bearers, there will be a group of enlisted technicians, who will change dressings, administer drugs, keep records, and perform such other duties as may be required.

There is nothing rigid about the field medical service. Improvisation and adaptation were the rule in World War II as they are today. There is a job to be done, and quickly, with whatever means are at hand. The job, in the case we are considering, is to get a man to surgery with the least possible delay consistent with keeping him alive. The battalion surgeon will probably not change the dressings the company aidman has applied, but will administer more plasma and perhaps morphine if the man shows signs of returning consciousness. The wound will be immobilized so far as its location permits to minimize the shock of further transportation, additional entries will be made on the EMT, and the patient will be speeded on the next stage of his journey. His destination now will be the clearing station of his division, located five to ten miles behind the front, and the field hospital set up adjacent to it specifically for forward surgery. When he leaves the battalion aid station he will pass from first to second echelon medical service—from regimental to divisional control.

Before we move on to the division clearing station with our hypothetical casualty, some further explanation may be in order. In the Mediterranean, as in other overseas theaters in World War II, each division was served by two different bodies of medical troops. Up to this point we have been dealing with personnel of the medical detachment, headed by the division surgeon. In the medical detachment of an infantry division toward the end of 1944 there were 32 officers, including dental and administrative as well as medical, and 383 enlisted men. Each regiment and each battalion had its medical section under a medical officer, with enlisted technicians attached as aidmen at the company level. In addition to the medical detachment, each division had an organic medical battalion, organized into a headquarters, three collecting companies, and a clearing company. The collecting companies, generally attached one to each regiment of the division, were basically ambulance and litter-bearer units. The clearing company, on the other hand, was equipped to function as a small—and sometimes not so small—hospital; or rather, two hospitals, for its two platoons were always prepared to set up independently. The usual procedure was to have one platoon in operation, the other packed and ready to "leapfrog" forward as the line of battle advanced. Between the clearing station and the battalion aid stations there might or might not be a collecting station, set up by the appropriate collecting company. In Italy, where the roads were relatively good and rugged country offered protection for clearing stations close to the front, the intermediate step was often bypassed. Ambulances, or jeeps fitted with litter racks, picked up casualties at the battalion aid stations, or if these were not accessible to vehicles, at ambulance loading posts within reasonable litter carry of the aid stations. If a collecting station were established, it would be located to serve two aid stations, or three if all the battalions of the regiment were engaged.

At the clearing station patients were again sorted—the French term *triage* is still used in the medical service to refer to this process—so that those whose wounds were critical might be cared for first; so that specialized needs would be referred to specialized skills; and as at the aid station, so that no man would be sent farther to the rear than his bodily condition required. Here there would be medical cases as well as battle wounds and injuries, for the clearing station was in effect the most forward hospital serving the division and therefore the most accessible from the front lines, where disease might claim as many victims as bullets. The system that developed in the Mediterranean about the middle of 1943 was to set up as close as possible to each division clearing station a platoon of a field hospital to receive those casualties in need of immediate surgery. The field hospital itself was a versatile new unit, capable of operating as a single 400-bed hospital, or as three separate 100-bed hospitals. When split three ways the surgical staff was wholly inadequate, but the deficiencies were made up by attaching teams from an auxiliary surgical group, some general, some specialized, but each a fully functioning unit with its own equipment as well as its own personnel.

Now let us get back to the casualty whose progress we are following along the chain of evacuation. He is picked up at the battalion aid station by a squad of litter bearers from the collecting company, sent forward from an ambulance loading post that might be only 300 or 400 yards away as the crow flies, but half to three-quarters of a mile by the narrow, winding trail that must be used. The tedious and difficult hand carry once completed, he will be delivered at the clearing station along with other wounded men of his regiment in a matter of minutes. It is now two hours or more since he received his wound, but he is still alive and his chances are now good, for he is only moments away from the finest in surgical skill and facilities. The field hospital to which he is immediately carried is a tent with packed earth floor, heated if necessary by oil stoves and lighted by generator-driven electric lamps. In physical appearance it is not at all like the fine modern hospitals at home, but in its equipment and in the skill and motivation of the two surgeons, anesthetist, and surgical nurse who with two enlisted technicians make up a surgical team, it is as good or better.

From the field hospital rearward progress is relatively standardized. The patient will be retained until he is strong enough to be moved without damage—possibly as much as a week. If the front advances significantly in that time, another field hospital platoon will set up adjacent to the new site of the division clearing station, leaving the old hospital or a detachment from it to operate where it is until all its patients are transportable. Our casualty, along with other holdovers, will next be moved to an evacuation hospital, still in the combat zone, in all probability still under canvas, but considerably farther to the rear. These units in World War II Tables of Organization were of two types: a 400-bed hospital that could be moved quickly in two installments with its own organic transportation, and a 750-bed hospital in which mobility was sacrificed for somewhat more complete facilities. Ideally one 400-bed "evac" backed up each division, some eight to twelve miles behind the clearing station, with one of the larger units supporting two divisions. Both types of evacuation hospital were prepared to give definitive treatment to all casualties. They were staffed and equipped, that is, to do whatever might be necessary for the recovery of the patient. The primary difference between these hospitals and the so-called "fixed" hospitals of the communications zone was their proximity to the front lines. For that very reason, however, they could not hold patients for any great length of time. As a rule only those who could be returned to duty within a week or two or, alternatively, passed on to a convalescent hospital, were retained. The convalescent hospital was another combat zone unit, where the man no longer in need of constant medical or surgical care but not yet strong enough to fight could regain his vigor. It conserved both professional and combat manpower by operating with a low ratio of medical officers to beds, and by retaining in the army area men whose services might otherwise have been lost indefinitely in the complex machinery of the replacement center. Those whose treatment would require a longer period of time were transferred to the communications zone. The particular casualty whose treatment and evacuation we are discussing will be one of these.

Had he been less severely wounded his injuries would have been dressed and rebandaged at the clearing station and he would have been moved to an evacuation hospital for surgery. As it is, he will be a transient at the evac, on his way to the communications zone. When he moves from the field hospital unit to the evacuation hospital he will pass from division to army control, at the same time entering the third echelon in the chain of evacuation. He will be brought to the evac by an ambulance of a collecting company, but this time it will be a company of a medical battalion (separate)—not organic to any formation, but in this case assigned to army and under control of the army surgeon. The next stage of his journey, which will bring him into the fourth echelon of the chain, will be in all probability too long for an ambulance run.

After a day or two at the evacuation hospital, with a fresh dressing on his wound and a new entry on his Emergency Medical Tag, our casualty will be moved by ambulance to a nearby railhead, port, or airstrip to continue rearward by whichever mode of transport is most convenient to the location. In Italy, except for Anzio where all transportation was by water, it would have been by hospital train, or by C–47 cargo plane rigged with litter racks to hold 18 or 20 nonambulatory patients and staffed by personnel of a medical air evacuation transport squadron. Either way, responsibility and control would have rested with the communications zone, most likely in the Mediterranean with a base section. This particular casualty will require further, probably extensive, surgery before his damaged organs are restored to relatively normal use, so that a general hospital is indicated.

The numbered general hospital overseas (as distinct from the named general hospital in the zone of interior), singly or in a grouping or center, enjoys the relative safety of the communications zone. It had in World War II 1,000 to 2,000 beds, with many specialties represented on its staff and equipment adequate for almost any situation it might be called upon to meet. A less difficult case than the one we are following might go to a station hospital, which would perform most of the functions of a general hospital—indeed might be acting as a general hospital—but would be smaller, with fewer specialists and less complete equipment. The World War II station hospital had anywhere from 25 to 900 beds; in the Mediterranean most were 500 beds. The station hospital normally serves a post or garrison, referring its more serious cases to a general hospital, but in a theater of operations requirements dictate use. In the Mediterranean the station hospital in practice was often indistinguishable from the general hospital, although a larger proportion of its patients were apt to be service or other rear echelon troops. In both types medical cases usually outnumbered surgical.

In the general hospital our casualty might have another, more leisurely, operation, but this will depend on the probable length of his stay, which will be determined by the theater evacuation policy and by the judgment of the medical officers on his case. An evacuation policy establishes the number of days of hospitalization the theater medical authorities feel they can give to any one case. The policy in the Mediterranean Theater varied from 30 to 120 days, but for most of the time it was 90. This meant that if a patient admitted to a communications zone hospital would in the opinion of his doctors be fit for duty in 90 days or less he would be retained and treated, being returned to his unit or sent to a replacement center when he was recovered. If, on the other hand, the chances of his recovery within that time were remote or nonexistent, he would be sent to the zone of interior as soon as he could safely be moved so great a distance. It is clearly to the advantage of a theater to have as long an evacuation policy as possible, because the longer the policy the more sick and wounded will be kept in the theater for future combat operations. It is the availability of beds and of trained personnel in relation to the incidence of battle wounds, injuries, and disease that determines the policy.

Full recovery, in the case we are following, will take months or possibly years of prolonged and specialized treatment. The patient will therefore not stay long at the general hospital, but will be sent home to the United States as quickly as possible. When he boards hospital ship or plane, according to the availability of transportation and the urgency of his case, he will enter the fifth and final echelon of the chain of evacuation. Thus it may well be that two weeks after being severely wounded in the mountains of northern Italy, this particular soldier will be admitted to Walter Reed Army Hospital in Washington, or to one of the other named general hospitals that may be closer to his home. There he will remain until cured, or until everything that can be done for him has been done. If his doctors believe he is still in need of medical attention, he will be transferred to a Veterans' Administration hospital. He is perhaps not quite as whole as he was, but he is alive and capable of useful citizenship. That gift of life he owes to the dedication and skill of the men and women who make up the medical service of the U.S. Army.

CHAPTER I

Medical Service in the Atlantic Defense Areas

The war against Germany, which began for United States ground forces with the invasion of North Africa on 8 November 1942, could never have been won if the Atlantic approaches had not first been secured. Although less spectacular than combat operations, the establishment and defense of sea and air routes to Europe, Africa, and the Middle East were no less essential to the final victory. The few permanent installations in the Panama Canal Zone and Puerto Rico were supplemented in the early years of the war by new bases stretching from the Arctic Circle to the Equator and from central Canada to the Azores.[1] The area involved is tremendous, and the diversity of climate and socioeconomic conditions great. Each base where Army troops served had its own special problems, but there was a common pattern. Together, the bases formed a screen of defensive outposts. They were also land links in three major transatlantic air routes, and some had additional strategic value as jumping-off points for future operations.[2]

The Atlantic Approaches to War

Establishment of Atlantic Bases

The German conquest of France in May 1940, with its immediate threat to Great Britain, stimulated the formulation in the United States of detailed plans for a dynamic defense of the Western Hemisphere that would include outposts far from the shores of the American continents. The swiftly moving events of the summer culminated on 2 September in a U.S.-British agreement to exchange fifty overage U.S. destroyers for bases on British soil in the Caribbean and the Atlantic. The agreement covered Army, Navy, and Air Corps bases in the Bahamas, Jamaica, Antigua, St. Lucia, Trinidad, and British Guiana on 99-year lease. At the same time the right to establish U.S. bases in Newfoundland (then a crown colony) and in Bermuda was granted as a gift. Early in 1942 the British Government also authorized establishment of an American air base on Ascension Island, between Brazil and Africa. Studies of possible sites began in the fall of 1940 and early the next year American troops began moving into some of the new bases.

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[1] This account excludes Alaska, Hawaii, and western Canada, which are treated in connection with the war against Japan.

[2] There is pertinent background material in the following volumes of UNITED STATES ARMY IN WORLD WAR II: (1) Mark Skinner Watson, *Chief of Staff: Prewar Plans and Preparations* (Washington, 1950); (2) Kent Roberts Greenfield, Robert R. Palmer, and Bell I. Wiley, *The Organization of Ground Combat Troops* (Washington, 1947); (3) Ray S. Cline, *Washington Command Post: The Operations Division* (Washington, 1951); (4) Maurice Matloff and Edwin M. Snell, *Strategic Planning for Coalition Warfare, 1941–1942* (Washington, 1953); (5) Stetson Conn and Byron Fairchild, *The Framework of Hemisphere Defense* (Washington, 1960); (6) Stetson Conn, Rose C. Engelman, and Byron Fairchild, *Guarding the United States and Its Outposts* (Washington, 1963). Also valuable for background are: (7) Samuel Eliot Morison, "History of United States Naval Operations in World War II," vol. I, *The Battle of the Atlantic, September 1939–May 1943* (Boston: Little, Brown and Company, 1947); and (8) the following volumes from "The Army Air Forces in World War II," edited by Wesley Frank Craven and James Lea Cate, and published by the University of Chicago Press: vol. I, *Plans and Early Preparations: January 1939 to August 1942* (1948), vol. II, *Europe: TORCH to POINTBLANK, August 1942 to December 1943* (1949), and vol. VII, *Services Around the World* (1958).

In mid-1941 American forces began relief of the British garrison in Iceland, after diplomatic arrangements with the Icelandic Government. A similar movement of U.S. forces into Greenland was authorized by the Danish minister in Washington, D.C., who functioned with his staff as a government in exile after the absorption of his country by the Nazis. Agreements with representatives of the Dutch Government led to American relief of British troops on Aruba and Curaçao Islands, Netherlands West Indies, and to an American occupation of Surinam. The establishment of air routes across both the North and the South Atlantic led to stationing considerable numbers of Army Air Corps and other service personnel in central and eastern Canada, and in Brazil.

During the period before American entry into the war, U.S. Army strength was built up in Panama and Puerto Rico, and the number of troops in the newly acquired bases also increased rapidly. An Axis attack across the South Atlantic against Brazil was regarded by both the Army and the Navy as a distinct possibility, whereas a Japanese attack on Pearl Harbor was thought to be less likely because of the presence of the Pacific Fleet. When the less likely attack came on 7 December 1941, attention shifted abruptly to the Pacific, and estimates of Army strength necessary to maintain the security of the Atlantic were revised in the light of the new conditions. Expansion continued, but at a relatively slower pace. Nevertheless, by December 1942 there were 175,000 U.S. troops in the defensive bases along the eastern coasts of North and South America and on the islands linking the Western Hemisphere to Europe and Africa. This figure exceeded the American strength in the United Kingdom at that time, and was half of the U.S. Army strength in the Pacific, where actual combat had been in progress for a year. Troop strength in some areas began to decline while others were still building, so that the over-all figure never was much above that at the end of 1942. The peak month was May 1942, when 181,867 U.S. soldiers garrisoned the Atlantic bases.

These bases were set up as semitactical organizations, with enough ground combat troops in most instances to hold off a hostile landing force until help could be sent. Engineer troops were usually present in considerable numbers in the early stages of occupation, giving way to Air Forces units, mostly Air Transport Command (ATC) personnel, when the construction work was finished. Naval forces were also stationed at many of the bases. Administratively, the new bases in the Caribbean were brought under the pre-existing military departments having jurisdiction over Puerto Rico and the Panama Canal Zone. In Brazil a theater-type organization was set up to supersede control by the Air Transport Command. In the North Atlantic, however, the various major bases were established as independent commands and were only brought together under the Eastern Defense Command in the middle of 1944. All of the North Atlantic bases ultimately passed to control of the Air Transport Command.

Medical Service in the Atlantic Bases

In Puerto Rico and the Panama Canal Zone, medical facilities were part of the Army's peacetime establishment. Wartime needs were met primarily by expansion of units, just as they were in the zone of interior. In the new bases, however, all medical facilities had to be sent in. For the most part, buildings were constructed by the Corps of Engineers, whose troops generally preceded both ground and air personnel. Indeed, the engineers often supplied medical service as well as buildings for a time after the combat troops arrived. To care for thousands of civilian workers on its various airfield and other projects at the new bases, the engineers had been forced to establish a medical service of their own. Directing it for the eastern division was Col. (later Brig. Gen.) Leon A. Fox. Usually by the time ground troops arrived at a base, the engineers had in operation an infirmary or small hospital, which served until Medical Department units could be unpacked and housed.[3]

The Air Transport Command similarly had its own medical service, which at some bases co-existed with the Army medical service, and at others merged with it. Where command of the base itself passed to the ATC after the war, Army medical facilities and installations were transferred to the new jurisdiction.

Bed requirements for the new bases were computed on the same 5-percent ratio used for hospitals in the United States, but in practice the ratio was never more than a rough rule of thumb, more nearly true in the aggregate than in detail. Initially, hospital care at the bases was provided by medical detachments, the provisional hospitals established being activated in place later on as numbered station hospitals. It was not until the fall of 1941 that the first numbered hospital units activated in the United States were shipped out to Iceland. Before the war was over, the number of such units in the Atlantic defense areas increased to a peak of 5 general hospitals, 45 numbered station hospitals, a handful of unnumbered hospitals of varying sizes, and 10 or more dispensaries equipped to function as small hospitals. Excluding dispensaries and hospital expansion units, the Table of Organization (T/O) bed strength totaled a maximum of 10,145 in June 1943, at which time the bed ratio (percentage of the command for which beds were available) was 5.8.[4]

Medical Department activities at all of the Atlantic bases included dental and veterinary work, but for the most part no special problems were encountered in carrying out these functions.

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[3] For more detailed treatment, see Blanche B. Armfield, "Medical Department, United States Army," *Organization and Administration, in World War II* (Washington, 1963), ch. II.

[4] See app. A–1. For various other comparisons, including Medical Department strength, see John H. McMinn and Max Levin, "Medical Department, United States Army," *Personnel in World War II* (Washington, 1963), ch. XI.

The North Atlantic Bases

Iceland Base Command

As a precaution against possible German occupation, the British in May 1940 sent troops to garrison Iceland. By the spring of 1941, however, the British were too hard pressed in Africa to waste manpower on a purely defensive situation. After some hesitation, but with the approval of the Icelandic Government (Icelanders felt there would be less risk in being occupied by a nonbelligerent) President Franklin D. Roosevelt decided early in June 1941 to relieve the British garrison with American troops. An initial force of 4,100 marines landed in Iceland on 7 July. The marines were followed on 6 August by the 33d Pursuit Squadron, whose P–40's were flown in from an aircraft carrier. The first increment of ground troops—some 6,000 officers and men of the 5th Division—arrived on 15 September. The Iceland Base Command (IBC) was established as the British garrison was relieved, and U.S. forces prepared to protect the transatlantic air transport and ferry routes and the vital sea lanes to the British Isles, less than 800 miles away.[5]

Command headquarters was established at Camp Pershing, about two miles east of Reykjavík. Several other camps lay north of headquarters, within a 10–20-mile strip close to the coast and centering around Álafoss. Eighty percent of the U.S. force was concentrated in these camps. The remainder was scattered at isolated airfields and radar stations around the rim of the island.

The IBC reached peak strength in May 1943 when, with 40,712 ground, air, and service troops, it was exceeded in size only by the Panama Canal Zone among Atlantic defense areas. Ground forces included engineer and service troops and the entire 5th Division. Air combat strength was augmented, as soon as suitable fields could be made available, by the 9th Bomber Squadron (H) and the 1st Observation Squadron. The bulk of the Air Forces units in Iceland, however, were elements of the Air Transport Command, whose home base, shared with the bombers, was Meeks Field near Keflavík on the southwest tip of the island.

By the time peak strength was reached, the threat of German invasion of Iceland was negligible. In August 1943 the garrison was cut by more than 25 percent; the entire 5th Division was withdrawn. Thereafter, a steady decline in troop strength brought the total to less than 1,800 men by the end of 1945, more than a third of them Air Forces personnel. The Iceland Base Command, which was under the European Theater of Operations (ETO) from June 1942 on, passed to control of the Eastern Defense Command in the middle of 1944. The Air Transport Command, which retained an interest in Iceland after the war was over, assumed control of all remaining U.S. Army activities there on 1 January 1946.

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[5] Principal sources for this section include: (1) Conn, Engelman, and Fairchild, *Guarding the United States and Its Outposts,* chs. XVIII, XIX; (2) Narrative Hist, Iceland Base Comd, Always Alert, 16 Sep 41–1 Dec 45, MS, OCMH files; (3) Lt. Col. William L. Thorkelson, The Occupation of Iceland during World War II, MA Thesis, Syracuse University, September, 1949; (4) Annual Rpts, Surg, IBC, 1941–44; (5) Annual Rpts, Surg, 5th Div, 1942–43; (6) Annual Rpts, 208th Gen Hosp, 1942, 1943; (7) Annual Rpts, 11th, 167th, 168th Sta Hosps, 1941–43; (8) Annual Rpts, 14th, 15th, 49th, 72d, 192d Sta Hosps, 1942, 1943; (9) Annual Rpts, 92d Sta Hosp, 1942–45; (10) Annual Rpts, 365th Sta Hosp, 1943, 1944; (11) Annual Rpts, 366th Sta Hosp, 1943–45; (12) Arctic Laboratory, Sep 41–Jun 44, AAF, N Atl Wing, ATC, app. F; (13) Med Hist Rcd, Oct 44–Dec 44, app. E, AAF, N Atl Wing, ATC; (14) Hist of Med Dept, ATC, May 41–Dec 44; (15) Ltr, Col Charles H. Beasley (Ret) to Col O. F. Goriup, 10 Aug 59, commenting on preliminary draft of this volume.

Medical Organization—The strength of the Medical Department in Iceland rose from 749 at the end of 1941 to 2,959 a year later. By the end of 1943 the total number of officers, nurses, and enlisted men of the Medical Department had declined to 1,163 and was down to 429 by the end of 1944. T/O bed strength went through a corresponding expansion and decline, from an initial 750 to a peak of 2,600 in October 1942, declining to 400 by the middle of 1944.

The base command surgeon during the most active period was Lt. Col. (later Col.) Charles H. Beasley, who had accompanied the initial Marine contingent in July in order to make a medical evaluation of the island. Colonel Beasley returned to Iceland with the Army ground troops, remaining until August 1943, when he was relieved by Col. John F. Lieberman. Lt. Col. John C. McSween became IBC surgeon in early 1944. In addition to its regular function as guardian of the health of the U.S. troops in the command, the base surgeon's office did much to win over the Icelandic people. Army hospitals treated large numbers of Icelandic citizens who had been injured in the vicinity of American camps, and also cared for civilians who were struck by military vehicles. Members of the Medical Department co-operated freely with the local public health authorities, and Army veterinarians helped their Icelandic colleagues examine, test, and treat livestock, and aided them in other agricultural matters. Many of the most prominent doctors of Iceland inspected U.S. Army hospitals and attended Army medical meetings. In turn American medical officers visited Icelandic patients in consultation. On several occasions the Army supplied local hospitals with urgently needed drugs and biologicals, while the American Red Cross contributed hospital and medical supplies to its Icelandic counterpart.

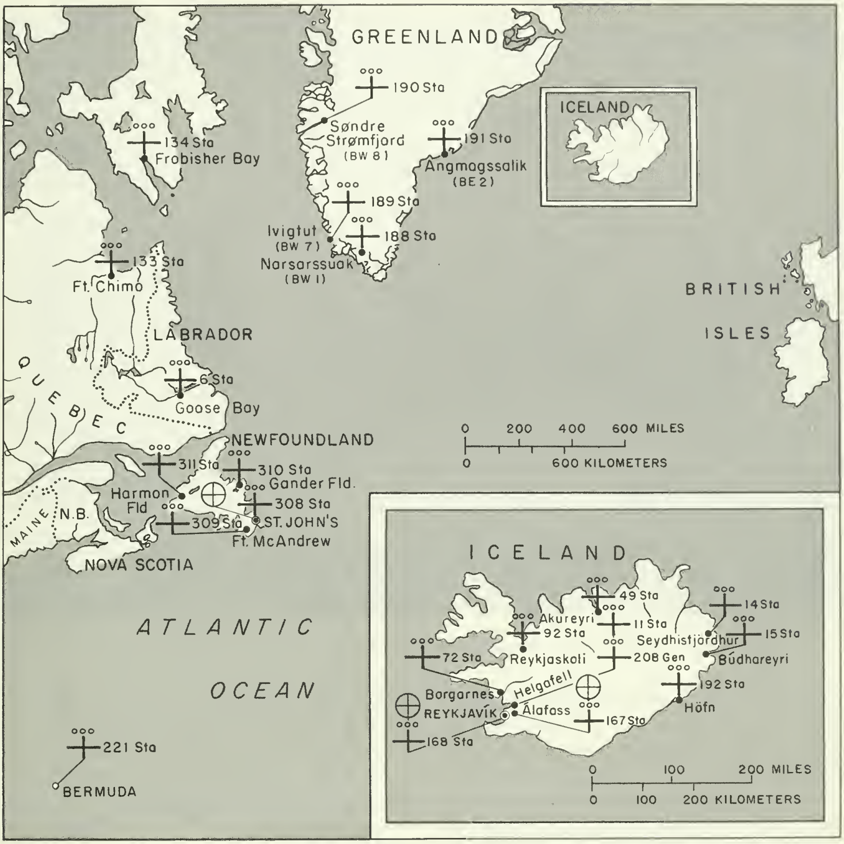
COLONEL BEASLEY

The work of the surgeon's office revolved around the system of hospitalization and evacuation and the related medical supply function, each of which will be discussed under a separate heading. Supplementing these activities at the base command level was the divisional medical service, which operated camp dispensaries and treated 5th Division personnel wherever they were stationed. The organic 5th Medical Battalion furnished routine evacuation service from unit dispensaries to nearby station hospitals and from the hospitals back to the dispensaries. The medical battalion also operated a dispensary for the port of Reykjavík and ran a provisional hospital in the Keflavík area until a permanent station hospital was established there. Air Forces units maintained their own dispensaries and operated crash aid stations for emergency treatment at the various airfields. Engineer troops, which preceded the Army combat elements by about a month, had their own medical detachments, but anything of a serious or complicated nature went to Marine and later to Army installations.

Hospitalization—The disposition of U.S. Army hospitals in Iceland was dictated by the combination of mountains, lava beds, and glaciers that circumscribed roads and airfields, and by the rugged coast line, turbulent seas, and icebergs that made water evacuation hazardous much of the year. Although the bulk of the beds were in the Reykjavík-Álafoss area to serve the largest concentration of troops, it was still necessary to supply hospital facilities wherever American soldiers were stationed. Three numbered station hospitals arrived with the main body of troops in mid-September 1941, and two of these were in operation before the close of the year. The 168th Station Hospital was established in Reykjavík in a permanent building formerly used by a British hospital. The main frame structure held 100 beds, and Nissen huts were used to bring the hospital up to its 250-bed T/O capacity. The first patient was admitted on 24 September. The following week the 11th and 167th Station Hospitals, both 250-bed units, which had arrived in Iceland at the same time as the 168th, were attached to the latter until suitable sites could be prepared. The 11th Station Hospital opened on 22 December in a section of a British hospital at Camp Helgafell, some ten miles north of Reykjavík. The 167th remained attached to the 168th until April 1942, when it moved into newly erected Nissen huts at nearby Álafoss. (*Map 1*.)

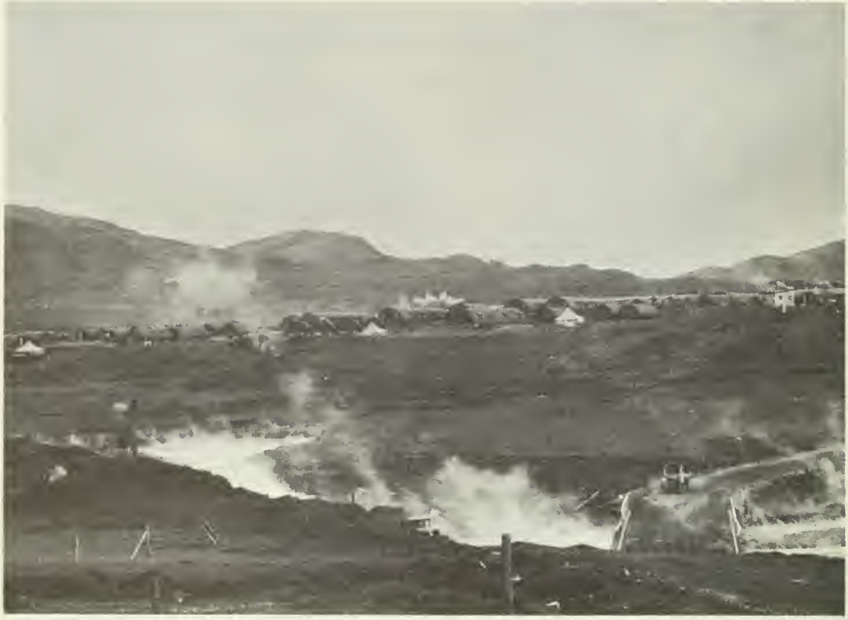
During 1942 six more station hospitals and one general hospital arrived on the island to serve an increasing number of Army troops coming in from the United States. The 1,000-bed 208th General Hospital came in March and began operating before the end of the month at Camp Helgafell, where it shared quarters with a British general hospital and the U.S. 11th Station Hospital. The 11th moved in June to Kaldadharnes, some twenty-five miles southeast of Reykjavík, where it served personnel of an airfield. The British hospital was withdrawn to the United Kingdom in August, leaving the 208th General in sole possession of the hospital plant.

The 72d and 92d Station Hospitals both arrived in August 1942. The 92d, with 75 beds, began operating in September at Reykjaskoli near the head of Hrútafjördhur on the north coast of Iceland. The 72d—a 50-bed unit—was scheduled for Borgarnes about thirty miles north of Reykjavík but, because of a variety of construction difficulties, did not get into operation until the beginning of January 1943. By then changes in troop dispositions had made a hospital


GREENLAND
190 Sta
Søndre Strømfjord (BW 8)
191 Sta
Angmagssalik (BE 2)
189 Sta
188 Sta
Ivigtut (BW 7)
Narsarssuak (BW 1)
ICELAND
134 Sta
Frobisher Bay
133 Sta
Ft. Chimo
LABRADOR
QUEBEC
6 Sta
Goose Bay
NEWFOUNDLAND
311 Sta
310 Sta
Gander Fld.
308 Sta
Harmon Fld
309 Sta
ST. JOHN'S
Ft. McAndrew
MAINE
N.B.
NOVA SCOTIA
ATLANTIC OCEAN
221 Sta
BERMUDA
BRITISH ISLES
0 200 400 600 MILES
0 600 KILOMETERS
ICELAND
49 Sta
Akureyri
11 Sta
92 Sta
14 Sta
15 Sta
Seydhisfjördhur
72 Sta
Reykjaskoli
208 Gen
Búdhareyri
192 Sta
Borgarnes
Helgafell
REYKJAVÍK
Álafoss
Höfn
167 Sta
168 Sta
0 100 200 MILES
0 100 200 KILOMETERS

Map 1—U.S. Army Hospitals Supporting North Atlantic Bases, 1 June 1943

at Borgarnes unnecessary, and the unit was moved later in January to Kaldadharnes, where air activity was increasing. The 75-bed 14th Station Hospital and the 500-bed 49th both reached Iceland in September 1942 and went into operation the same month. The 14th was at Seydhisfjördhur on the eastern coast; the 49th enlarged a 200-bed hospital plant taken over from the British near Akureyri on the north coast, the second largest city in Iceland and the site of a large seaplane base. The 15th Station, another 75-bed unit that also arrived in September, began operating at Búdhareyri, about forty miles south of the 14th, in November. The 75-bed 192d Station Hospital arrived in October and was



167TH STATION HOSPITAL *at Alafoss, Iceland, showing hot springs used to heat buildings.*

attached to the 168th Station at Reykjavík until its own hospital plant at Höfn on the southeastern coast was ready in January 1943.

With the exception of the 168th Station at Reykjavík, all U.S. hospital plants, including those taken over from the British, were Nissen, Quonset, or similar types of corrugated steel huts. Even with prefabricated buildings, however, construction was difficult. Materials for drains, plumbing, and electrical fixtures were not always available. Little could be accomplished during the winter months, when the nights were twenty hours long, and even the brief periods of daylight were often marred by cold, dampness, and winds up to 130 miles an hour. A civilian labor shortage forced reliance on troop labor, including that of Medical Department personnel. In the vicinity of Álafoss natural hot springs were used for heating hospital buildings.

The officers, nurses, and enlisted men of Iceland Base Command's hospitals, in addition to caring for all U.S. Army personnel in the command, provided hospitalization for members of the American Red Cross and for U.S. civil service employees. They also treated and hospitalized on occasion U.S. Navy and Marine Corps personnel, certain British Army, Air Force, and Navy men, some members of the Norwegian Army and Navy, and

American and Allied merchant marine casualties and survivors from sea mishaps. However, the bulk of patients were, of course, from the various camps of the command.

As the threat of German invasion of Iceland faded during 1943, the withdrawal of troops and relocation of remaining forces brought a number of changes in hospital dispositions. In April the 192d Station left Höfn for the Reykjavík area, where most of its personnel were already on detached service with the 168th Station, but the hospital did not resume independent operation. Further shifts came in June when the 15th Station, no longer needed at Búdhareyri, was attached to the 49th at Akureyri, and the 92d Station, including patients, was transferred from Reykjaskoli to Álafoss.

On 24 June the 192d Station Hospital was disbanded and its personnel and equipment were transferred to the 92d, which was reorganized as a 150-bed unit. On the same date the 208th General Hospital at Camp Helgafell was reduced from 1,000 to 750 beds, and the 168th Station in Reykjavík was expanded from 250 to 500 beds, in preparation for a mission elsewhere.

A few days later, on 2 July 1943, the 208th General was redesignated the 327th Station Hospital, without change of site or mission. On the same day the 500-bed 49th Station closed at Akureyri, leaving the smaller 15th Station to care for remaining patients in that area, and a week later sailed for the United Kingdom. It was followed by the 168th Station on 3 August.

The 11th Station, meanwhile, had shifted from Kaldadharnes to Reykjavík to replace the 168th. It was joined there by the 72d Station on 19 August. Two days later the 92d Station Hospital opened near Keflavík, adjacent to the Meeks Field headquarters of the Air Transport Command.

By this time the bulk of the ground force troops had left, as had many of the air and service forces. When the 15th Station from Akureyri and the 14th from Seydhisfjördhur both moved to the Álafoss-Helgafell area late in September, all U.S. hospitals were concentrated in the Reykjavík area. It remained only to consolidate the units for more efficient operation.

The first step in this direction was taken on 30 October when the 327th Station sailed for England. A consolidation of the remaining hospitals was effected on 6 December 1943. The 11th and 72d Station Hospitals were combined at Reykjavík to form the 150-bed 366th Station, while the 14th, 15th, and 167th Stations were combined at Camp Helgafell to form the 365th Station Hospital, with a T/O of 500 beds. At the end of 1943 only the 92d, 365th, and 366th Station Hospitals remained in Iceland, with a combined bed strength of 800. Seven months earlier there had been one general and nine station hospitals, with an aggregate of 2,600 T/O beds.

Except for Iceland's strategic function as a stop on the air route to Europe, the war there was over. Hospitalization was on a garrison basis, with the garrison steadily decreasing in size. The 365th Station transferred to the United Kingdom on 26 June 1944. On the first of that month the 92d Station had increased its bed strength from 150 to 250, but the number of beds on the island was still halved. The 366th was inactivated early in 1945, leaving the 92d Station the only

U.S. Army hospital in Iceland. It was transferred to the jurisdiction of the Air Transport Command on 1 January 1946, along with the remains of the Iceland Base Command.

Evacuation—From most of the army camps in Iceland patients were evacuated by ambulance from the unit dispensary to the nearest station hospital. Those who required general hospital care were moved on to the 208th General Hospital at Camp Helgafell, by ambulance from station hospitals in the western part of Iceland, by sea or air from those in more isolated areas. Evacuation by boat through coastal waters proved to be a very efficient method of handling patients from the eastern and northern parts of the command except during the long winter season, and was more frequently used than air evacuation.

The 120-day evacuation policy set up by the War Department for evacuation from Iceland to the United States proved to be entirely satisfactory. Both air and water transportation were used. In either case, patients to be evacuated to the zone of interior were cleared through the 208th General Hospital or, after its departure, through a station hospital acting as a general. Although the number of evacuees was not unduly large—327 in 1942, 1,180 in 1943, and 248 in 1944—there was generally a backlog because of unavailability of transportation or lack of proper facilities, especially for neuropsychiatric and other cases requiring medical attendance. Psychiatric cases amounted to 33 percent of those evacuated in 1942, 32 percent in 1943, and 56 percent in 1944.

The medical facilities of the Iceland Base Command were also available, to the extent needed, to care for 19,589 transient patients who were flown from the ETO to the zone of interior by way of Iceland between 1 January 1944 and 1 July 1945. To accommodate these, an unnumbered holding hospital was set up at Meeks Field, including mess facilities for walking patients. Litter cases were served hot meals aboard the planes. If a plane were held because of poor flying conditions, the 92d Station took care of the patients until they could continue their journey. The hospital also took care of any patients whose condition made it unsafe to continue. Medical attention was similarly available to 5,930 able-bodied men from the ETO who passed through Iceland between June and September 1945 on their way to the States.

Medical Supplies and Equipment—Medical supplies for the Iceland Base Command were handled through a main depot in Reykjavík and a subdepot and a package storage depot in the Álafoss area. The main depot—two fish-drying houses leased for the purpose—had more than 11,000 square feet of floor space for storage; the subdepot, in three prefabricated huts, had 2,880 square feet of storage space; and the package warehouse about a mile distant had 4,000 square feet. Individual hospital and other medical units maintained supply levels of from 90 to 180 days, the larger stocks being held by installations on the northern and eastern coasts, which were not readily accessible in bad weather. The depots held a 120-day supply by the end of 1942.

Six officers and 75 enlisted men were authorized for operation of the medical supply system in Iceland, but this number was never reached. Five officers and

50 enlisted men were sent, but even these figures were reduced by attrition to 4 and 45 respectively before the end of 1942. The supply system was reorganized early in August 1943 and again in mid-December. In August a Base Depot Section, 20th Medical Depot Company, was organized to carry on the medical supply function, but was supplanted in December by the 300th Medical Composite Platoon. Under the latter form of organization the depots were operated by two supply teams, one with an officer and 11 enlisted men, the other with 2 officers and 27 enlisted men.

While some medical units encountered a number of delays in getting their normal equipment, medical supplies as a whole were plentiful. Some items, such as quinine, mosquito bars, and various combat items, were never required in Iceland, and other items became surplus as the strength of the command declined. During 1943 excess British medical supplies to a total of 130,000 pounds, and 2,325,000 pounds of excess U.S. medical supplies were shipped to the United Kingdom. The year's end still found the depots bulging with supplies for 60 days of operation, 90 days' maintenance, and a further 90-day final reserve of certain necessary items, held in dispersed locations. These levels were sharply reduced during 1944 to a 30-day operating and 30-day maintenance level.

Professional Services—In spite of unfamiliar and unfavorable climatic conditions, the incidence of disease among U.S. troops in Iceland was exceptionally low. There were no diseases peculiar to the country, no mosquitoes, few insects of any kind. Common respiratory diseases constituted overwhelmingly the largest single cause for hospitalization. Half of all hospital admissions in 1942 were for respiratory diseases. In 1943 the respiratory disease rate was 190 per 1,000 per annum, including mild cases treated in quarters as well as those hospitalized. The 1944 rate, similarly computed, was down to 95. The command experienced a sharp rise in rates for such diseases after the arrival of each new troop contingent, but the situation would return to normal in about a month.

An outbreak of jaundice in May 1942 claimed 478 in that month. In June the number of cases climbed to 661, dropping to 170 in July and only 11 in August. The total number of cases for the 4-month period was 1,320. There were no deaths from jaundice. The cause was not determined. Large numbers of the rats that abounded in Iceland were examined, but none were found to be diseased. There appeared, however, to be some connection with yellow fever inoculations. All but 7 of the 1,320 men who came down with jaundice had been inoculated for yellow fever from the same lot of vaccine before leaving the United States.

An epidemic of mumps in the civilian population in 1942 was kept from spreading to the troops by prompt preventive measures. Only 128 sporadic cases were reported. Venereal disease, scourge of the Mediterranean and European theaters, was notable in Iceland chiefly for its almost total absence. Venereal rates for the base command were 4.4 per 1,000 per annum in 1942; 5.3 in 1943; and 6.2 in 1944. Only mental disorders showed a significant rise as time went on. Isolation, boredom, lack of recreation, adjustment problems, and a feeling of contributing little to the war effort combined to produce relatively high neuropsychiatric rates.

The general health of the U.S. troops in Iceland, excellent at all times, steadily improved throughout the war. The noneffective rate for 1942 was 29.5 per 1,000; in 1943 it was only 25.37; and in 1944 it was a startling 16.28. There were, of course, no combat wounds, and the accident rate–primarily plane crashes–was relatively low.

The dental service in the Iceland Base Command encountered no unusual difficulties. Dispersal of troops made it expedient to assign dentists to areas rather than to clinics, but for the most part the work itself was routine. The Veterinary Corps encountered more serious problems, stemming largely from inadequate sanitary standards on the part of the local authorities. From their arrival on the island, U.S. veterinary personnel worked with the Icelandic authorities and with individual farmers and food processers to improve methods and standards.

Greenland Base Command

After months of indecision, officials of the State, War, and Navy Departments agreed early in February 1941 that airfields and other facilities in Greenland would be needed for hemisphere defense, and that in view of the Monroe Doctrine the United States could permit no other power–not even friendly Canada–to take the initiative there. A survey expedition sailed in March. Less than a month later, on 9 April, the project received formal sanction when the Danish Minister in Washington (still recognized by the United States) and the Secretary of State signed an agreement under which the United States guaranteed the security of Greenland in return for the right to construct, maintain, and operate the required facilities. The first echelon of the Greenland force–469 officers and men–sailed from New York on 19 June and anchored off Narsarssuak on the southwest coast of Greenland on 6 July.[6]

To the United States and Great Britain, Greenland was considerably more than the "raw structure of rock and salt water and ice, all united by the eternal cold" that Col. Bernt Balchen had described. It was a potential stop on an air ferry route that could enable fighter planes to move from American factories to British bases under their own power; it was the only known commercial source of natural cryolite, invaluable as an electrolyte in the production of aluminum; and it was the gathering point for the storms that would influence air and naval activity in western Europe. The Germans had recognized the importance of obtaining weather data in Greenland and had established several meteorological stations that were subsequently eliminated by the British in the summer of

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[6] Sources for this section are: (1) Conn, Engelman, and Fairchild, *Guarding the United States and Its Outposts,* ch. XVII, ch. XX; (2) Craven and Cate, eds., *Plans and Early Operations,* pp. 122–23, 157–58, 342–48, 641–44; (3) Bernt Balchen, Corey Ford, and Oliver LaFarge, *War Below Zero: The Battle for Greenland* (Boston: Houghton Mifflin Company, 1944); (4) Annual Rpts, Med Dept Activities, Greenland Base Comd, 1941–44; (5) Annual Rpt, Base Hosp, Greenland Base Comd, 1946; (6) ETMD's (Essential Technical Medical Data), Greenland Base Comd, Jul 43–Nov 45; (7) Interv with Lt Col Otho R. Hill, 6 Sep 44; (8) Interv with Lt Col Norman L. Heminway, Dec 43; (9) Annual Rpts, 188th, 190th, 191st Sta Hosps, 1943–44; (10) Annual Rpt, 189th Sta Hosp, 1943; (11) Med Hist Rcd, Oct–Dec 44, app. E, AAF N Atl Wing, ATC; (12) Ltr, Norman L. Heminway to Col Goriup, 16 Aug 59; (13) Ltr, John R. McBride to Goriup, 28 Jul 59. Both letters comment on preliminary draft of this volume.

1940. Later, however, another German weather station was believed to be in operation. This was located and destroyed by an American force, but the Germans continued to obtain Greenland weather reports from a submarine kept in the area for that purpose.

In addition to its responsibility for the health of Army and Air Corps personnel and employees of civilian contractors stationed there, the Medical Department in Greenland supplied hospital facilities for the crews of Navy, Coast Guard, and merchant vessels and of transient aircraft. A small detachment of Medical Department officers and enlisted men arrived with the first contingent at Narsarssuak, where the first U.S. military post, BLUIE WEST 1, was established. In August 1941 the medical detachment there set up a 10-bed field-type tent hospital, which operated for two months before a suitable building could be erected. A 5-wing cantonment-type building was eventually built. The wings were connected by heated corridors. Supply rooms and the mess hall were off the main corridor, opposite the clinic and hospital wings. Initially, only one wing with twenty beds was required for inpatients. It was not until January 1943, when survivors from the torpedoed USAT *Dorchester* were brought to BLUIE WEST 1, that two other wings were made ready, expanding capacity to approximately sixty beds.

In October 1941 a post was established at the head of Søndre Strømfjord on the west coast of Greenland about fifteen miles inside the Arctic Circle. Known as BLUIE WEST 8, this post was under command of the famed arctic explorer, Capt. (later Col.) Bernt Balchen, with Maj. (later Col.) John R. McBride as surgeon. BLUIE WEST 8 included civilian construction workers, who had been there since September, and Army engineers. The engineer medical officer, Capt. (later Lt. Col.) Stephen W. Ondash, was responsible for the health of the civilians. The first hospital set up on the post, an engineer unit available to all, opened on 10 December 1941.

In November a post was established at Angmagssalik on the eastern coast of Greenland about forty miles below the Arctic Circle. BLUIE EAST 2, as the new post was called, was primarily a weather and communications station. It included a medical officer and an engineer dispensary operated by civilians. In March 1942 a post was set up at Ivigtut, about 100 air miles west of Narsarssuak, where the cryolite mine was located. The Ivigtut base was called BLUIE WEST 7. By June a small building had been erected for a dispensary.

The Greenland Base Command, with headquarters at BLUIE WEST 1, had meanwhile been formally activated on 26 November 1941, although Army forces in Greenland had been using that designation since their arrival. There was no surgeon for the whole command, however, until November 1942, when Colonel McBride, as the senior Air Forces medical officer on the island, was assigned that responsibility. He was succeeded in March 1943 by Maj. (later Col.) Norman L. Heminway, commanding officer of the 188th Station Hospital and surgeon of the BLUIE WEST 1 base. In December Colonel Heminway was transferred, being succeeded in each of his three capacities by Maj. (later Lt. Col.) Otho R. Hill.

Under War Department authority granted in September 1942, four num-

Bluie West 1, *Narsarssuak, Greenland, May 1943, with the 188th Station Hospital under construction in right foreground.*

bered station hospitals were activated to replace the makeshift units then functioning. (*See Map 1.*) Cadres were drawn from Medical Department personnel already on the ground and actually operating the existing hospitals and dispensaries that were to be elevated to numbered status by the new arrangement. Authorizations were given for hospitals of 250, 200, 150, and 25 beds, for BW–1, BW–8, BE–2, and BW–7 respectively. Construction of buildings began in the fall of 1942, continuing into the late months of 1943. The bulk of the work was completed by the end of that year, when the troop build-up reached its maximum strength of about 5,300. The unduly long construction time was due in part to weather hazards, in part to low priority in a very restricted labor market, and in part to the necessity for importing all building materials from the United States.

Largest of the hospitals, the 188th Station, opened at Bluie West 1 in its new buildings in December 1943. One of the finest examples of an overseas hospital, the installation was located for maximum terrain protection. It was built at a cost of $1,769,022. Its 32 cantonment-type buildings on 22.5 acres were connected by heated and insulated corridors. Central heating, electricity, running hot and cold water, and a modern sewage system made it a comfortable haven in the frozen wasteland of Greenland. The 188th Station, in addition to its function as post hospital, received patients from other units, mostly by air, who required further observation or treatment. It also acted as clearing and processing point for cases being evacuated to the United States.

Additional hospital construction at the smaller posts in Greenland during 1943 made conditions less crowded, but bed requirements were never as great as had been anticipated. The 190th Station Hospital, originally authorized as a 200-bed unit, was reduced to a 50-bed hospital by the time it moved into its permanent quarters at BLUIE WEST 8. The 191st Station at BLUIE EAST 2 also operated as a 50-bed unit, although its original authorization had been for 150 beds. The smallest of the four Greenland hospitals, the 189th at BLUIE WEST 7, remained a 25-bed unit throughout its period of operation. At none of the four post hospitals was medical service seriously interrupted during the period of construction. New plants were occupied by echelon, as space became available, without closing down the old until the new was functioning. Such unavoidable curtailment of minor services as occurred was compensated for by treating as many cases as possible on a "quarters" basis.

During the greater part of the year, transportation by water was very difficult or impossible. Therefore, each of the four main Army bases in Greenland had to be largely self-sufficient from the standpoint of supply. In practice this imposed no handicap as supplies for the base command as a whole were more than ample throughout the war. The months of isolation envisaged by the planners never materialized.

In addition to the four bases themselves, there were a dozen or more weather observation and radio posts operating out of one or another of the BLUIES. For the larger outposts of this type a medical officer was provided; for the smaller, only a trained Medical Department enlisted man could be spared.

Although the climate was much more severe and the setting far more bleak than anything the men had before experienced, there were no adverse effects on health. There were no indigenous diseases. The native Eskimos suffered heavily from tuberculosis, but contacts between the natives and the U.S. troops were so infrequent as to remove the hazard. The only venereal cases were among those who had been infected outside of Greenland. Respiratory diseases made up the largest item in the disease category, with newly arrived troops the most frequent victims. On the whole, however, the incidence of disease in Greenland was very low. Injuries, directly related to the treacherous and rugged terrain, ship loading and unloading, and construction work accounted for the largest number of patients admitted to hospitals, as well as about a quarter of all those evacuated to the zone of interior. The second largest group returned to the zone of interior, accounting for about 18 percent of the total, were the neuropsychiatric cases, stemming from the prolonged service in an isolated, unpleasant environment, combined with constant monotony and a complete lack of normal social contacts. A general apathy, called by the men stationed in Greenland, "The Arctic Stare," developed in a majority of troops after a year's stay on the island. It was notable, however, that even in the most difficult year, 1944, neuropsychiatric cases constituted only about 4 percent of hospital admissions. The suicide rate was also relatively low. Admissions for all causes to the main hospital of the command, the 188th Station Hospital, numbered 1,821 in 1943 and 2,137 during 1944.[7]

Evacuation of patients within Greenland moved from the outposts to the main bases, where the permanent hospitals were established, and thence, if more elaborate treatment or ZI evacuation were indicated, to the 188th Station Hospital. Patients could be evacuated to the 188th from other parts of Greenland only by air and by sea, while those within BW–1 came in by bus or ambulance. Most of the patients sent to the zone of interior for further treatment were transported there by air; a few went by ship. Weather problems frequently complicated evacuation procedures in Greenland. Poor flying conditions or ice packs —which prevented the passage of ships— were responsible for many delays. Greenland Base Command sent an average of 15 to 25 patients a month to the United States for general hospital treatment. Beginning in 1944 the personnel of the 188th Station Hospital and the Air Transport Command fed and furnished professional services to transient patients being evacuated by air from Europe to the United States. From May to October, 471 such cases passed through the command, 34 of which were temporarily hospitalized.

General reductions in strength during 1944 resulted in practically all ground force units being withdrawn from the command, leaving mostly air and service personnel. The base established to protect the cryolite mine at Ivigtut closed during the summer, and the 189th Station Hospital, which was located there, ceased operations in August. At the end of that month, Colonel Hill left the Greenland Base Command, being succeeded as post surgeon and commanding officer, 188th Station Hospital, by Capt. (later Maj.) John A. Jones, and as Greenland Base Command surgeon by Maj. Andrew W. Shea. Medical units operated below T/O authorizations when possible. Excess medical personnel and large amounts of surplus medical supplies were returned to the United States.

Greenland Base Command had become primarily an Air Transport Command stopover and a weather forecasting center a year before the ATC assumed full responsibility for all U.S. activities on the island in January 1946. Only the hospital at BLUIE WEST 1 continued active at this time.

Newfoundland Base Command

The island of Newfoundland lies on the great circle route between New York and the British Isles, controlling both sea and air lanes and blocking the mouth of the St. Lawrence. Its strategic importance had made its defense an object of concern to the United States and Canada early in the war. The right to establish U.S. bases there was given at the time of the destroyers-for-bases agreement of early September 1940, and an engineer survey party arrived on the island on 13 October. The first of the garrison troops followed late in January 1941 when the 21,000-ton USAT *Edmund B. Alexander,* first ship of her size to attempt the narrow, rocky entrance to the harbor, anchored at St. John's. The transport carried 58 officers and 919 enlisted men, including personnel to operate a 40-bed hospital, which was activated on shipboard.[8]

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[7] No detailed admission statistics are available for the other hospitals of Greenland Base Command, but admissions to the 188th Station Hospital constituted the bulk of all hospital admissions.

The St. John's base, to be known as Fort Pepperrell, was not yet ready to receive either troops or hospital. For the next four and a half months the *Alexander* served as a floating barracks, while the hospital continued to function on the ship. Medical supplies could not be reached until the ship was partially unloaded, but needed items were procured ashore. Civilian hospitals in St. John's cared for engineer troops and civilian construction workers until late February, when an engineer medical officer arrived and opened a small dispensary at the base. The dispensary grew into a 25-bed hospital, opened 16 June 1941. By this time the transport had been recalled, and the station hospital had moved from its shipboard quarters to a country estate about two miles from the city. Equipment for a 50-bed hospital had been unloaded from the transport, but could not be uncrated until covered storage space was found. At the beginning of December another move put the hospital, then known as Station Hospital, Newfoundland Base Command, into a newly completed barracks at Fort Pepperrell. Designed to accommodate 125 men, the building was readily converted into a 60-bed hospital, to be occupied pending completion of a suitable hospital building. (*See Map 1.*) The commanding officer of the hospital, Maj. (later Col.) Daniel J. Berry, also acted as Newfoundland Base Command surgeon.

A second U.S. hospital had meanwhile been established at Newfoundland Air Base near Gander. The base, still under construction but already occupied by units of the Royal Canadian Air Force, was one of the largest in the world. The American portion of the base, called officially U.S. Army Air Base, Newfoundland, but unofficially known as Gander Field, was occupied in May 1941. A 25-bed hospital to serve the base was activated at the same time and sited in a portion of the RCAF hospital functioning there. Evacuation was to Fort Pepperrell, 250 miles away by rail but only half of that distance by air. The hospital moved into its own building in December 1942 with a rated capacity of 150 beds.

A third U.S. Army hospital was set up originally as a 25-bed dispensary in January 1942 at Fort McAndrew, near the naval base of Argentia, seventy-five miles

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[8] The main sources for this section are: (1) Conn, Engelman, and Fairchild, *Guarding the United States and Its Outposts,* ch. XIV; (2) Watson, *Chief of Staff,* pp. 479–81; (3) Annual Rpt, Sta Hosp, Newfoundland Base Command, 1941; (4) Annual Rpt, Med Activities, Newfoundland Comd, 1942; (5) Med Bases in Newfoundland District doc included in Health Service, Caribbean, Apr 42; (6) Annual Rpt, Sta Dispensary, U.S. Army Air Base, Newfoundland, 1941; (7) Annual Rpts, 308th Sta Hosp, 1943, 1944; (8) Annual Rpt, 309th Sta Hosp, 1944; (9) Annual Rpts, 310th, 311th, Sta Hosps, 1943; (10) Arctic Laboratory, Sep 41–Jun 44, AAF, N Atl Wing, ATC, apps. I, J; (11) ETMD's, Newfoundland Base Comd, Jul 43–Dec 45; (12) Ltr, Col Daniel J. Berry (Ret) to Col Goriup, 2 Aug 59; (13) Ltr, Col Emmett L. Kehoe to Col Goriup, 5 Aug 59; (14) Ltr, Gunnar Linner to Goriup, 10 Aug 59. Last three letters comment on preliminary draft of this chapter.

308TH STATION HOSPITAL AT FORT PEPPERRELL, *Newfoundland. The basement, shown rising above ground level, was a completely self-contained bombproof unit to which patients could quickly be moved down ramps.*

west of St. John's. For the time being a small engineer hospital already on the ground handled cases beyond the capabilities of the dispensary, but a station hospital was formally activated in May and opened in June 1942, eventually absorbing the engineer unit. Last of the U.S. bases to get into operation was Harmon Field near Stephenville on the western coast of Newfoundland. Here a medical officer, a dental officer, and four enlisted men opened a 25-bed hospital in a small barracks in March 1942.

At each of the four U.S. bases, the hospital commander served also as surgeon of the base and as commander of the medical detachment.

The four U.S. Army hospitals were designated as numbered station hospitals on 1 April 1943. At that time the base unit at Fort Pepperrell became the 308th Station Hospital with a Table of Organization calling for 250 beds. With this enlargement of the hospital, its commanding officer, Lt. Col. Gunnar Linner since October 1942, was relieved as Newfoundland Base Command surgeon by Lt. Col. William J. Eklund. The 308th Station moved in June into a permanent all-concrete building designed for its special needs. There were two stories above ground, with a basement blasted from solid rock and protected by a thick concrete slab. The basement, which could be immediately converted into an underground hospital should the upper portion of the building be bombed, had complete facilities, including operating rooms, kitchens, refrigerators, stored food supplies, and a diesel electric power plant. It could be completely sealed and supplied with air drawn in through decontamination cannisters. Patients could be moved down ramps from the main hospital in a matter of minutes. Located at base command headquarters and adjacent to the capital and principal port of Newfoundland, the 308th took patients by transfer from the smaller and less well-equipped units and processed all patients being evacuated to the United States.

The post hospital at Fort McAndrew became the 309th Station Hospital, with a T/O of 100 beds. The 310th Station (150 beds) succeeded the post hospital at Gander Field, and the small Harmon Field unit became the 25-bed 311th Station Hospital. Maximum T/O bed strength of 450 was reached at this time, to serve a troop strength of approximately 9,000. Troop strength increased to a peak of 10,500 in June 1943 but soon fell back below the 9,000 level. The 310th and 311th both passed to the jurisdiction of the Air Transport Command in September but continued to report to the base surgeon until July 1944, when both were disbanded. The bulk of the personnel and equipment were allotted to newly organized dispensaries, which were really small hospitals under the North Atlantic Wing of the Air Transport Command.[9]

By mid-1944 the Newfoundland Base Command was little more than a stop on the air route to Europe. Lt. Col. Emmett L. Kehoe, who had relieved Colonel Eklund as base surgeon in January 1944, also relieved Colonel Linner as commanding officer of the 308th Station Hospital in March, thus recombining the two positions. In December 1944 the 308th Station was reduced to 150 beds and the 309th to 75. In September 1945 the 309th was disbanded and the 308th reduced to 25 beds. On 1 January 1946 all remaining installations were turned over to the Air Transport Command.

Evacuation from Newfoundland was never a problem, though evacuation within the island was often difficult owing to the virtual absence of roads. Gander and Harmon Fields were connected with St. John's by railroad but the distances were considerable—250 rail miles from Gander and close to 500 from Harmon—and the service in winter was erratic because of the heavy snowfalls. Air evacuation was faster, but it was even more subject to the hazards of unpredictable weather. For this reason, a medical officer of better than average surgical skill was assigned at each hospital. Evacuation to the United States was by sea until late 1942, when transport planes equipped with litter racks also began to be used.

After the invasion of Normandy in June 1944, Harmon Field became increasingly important as a stopover point for patients being evacuated from Europe. A 72-bed transient hospital was built to accommodate these patients when poor weather conditions made it impossible to continue the flight. A new post hospital of 75-bed capacity, completed in March 1945, also had more than half of its beds available for transients. When flights were not interrupted, litter patients were given a warm meal on the planes. Plasma and whole blood were available for those who needed them. Fresh milk was flown up from Presque Isle, Maine, especially for use of evacuees passing through Harmon Field.

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[9] See Clarence McKittrick Smith, *The Medical Department: Hospitalization and Evacuation, Zone of Interior,* UNITED STATES ARMY IN WORLD WAR II (Washington, 1956), pp. 174–75.

In general the health of the command was good. The climate was relatively mild, resembling that of northern New England. Although the winters were characterized by sudden changes from sunshine to snow or sleet, with a penetrating northeast wind, the thermometer seldom dropped below zero. The troops were housed in permanent buildings and had proper clothing. The incidence of respiratory diseases was not unduly high, and intestinal diseases were at a minimum. In 1942 there were 25 cases of catarrhal jaundice, which, like the parallel but more severe outbreak in Iceland, were apparently related to yellow fever immunization.

A venereal disease rate that climbed to 35 per thousand per annum in October 1942 and averaged in the neighborhood of 20 during 1943 was considered excessive by Medical Department officers in Newfoundland, although that rate compared very favorably with those in other areas.[10] The establishment of prophylactic stations and the issue of individual prophylactics to the men, together with a stepped-up educational program and excellent co-operation from the local authorities, brought the rate down to a negligible figure by 1945. A local health problem was tuberculosis, which was widely prevalent among the Newfoundlanders and thus constituted a serious threat to U.S. troops. Diphtheria, also common among the residents, never seriously menaced the American forces.

On the supply side, there were early difficulties brought about more by lack of storage facilities than by lack of supplies themselves. After the bases were well established, medical supplies were quite adequate—large quantities were even returned to the United States during 1944. The base medical depot at Fort Pepperrell was discontinued late in 1943, the function passing to the 308th Station Hospital.

Bermuda Base Command

Geographically, Bermuda was the key to the North Atlantic defenses. It lies near the center of a line from Nova Scotia to Puerto Rico, which is to say the center of an arc shielding the Atlantic coast of North America whose ends are Newfoundland and Trinidad. Only Newfoundland preceded Bermuda among the bases acquired from Great Britain. As in Newfoundland, engineer troops were first to reach the island, the vanguard arriving in November 1940. An engineer medical officer reached Bermuda in January 1941, but no engineer hospital was established until August. The Bermuda Base Command, meanwhile, had been activated on shipboard on 18 April 1941 and established headquarters two days later in the Castle Harbour Hotel some two miles across the water from the site selected for the U.S. Army base and airfield near the eastern end of the islands. (*See Map 1.*)[11]

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[10] See pp. 92-94, below.

[11] Chief sources for this section are: (1) Conn, Engelman, and Fairchild, *Guarding the United States and Its Outposts*, ch. XIV; (2) Watson, *Chief*

Convalescent Patients on the Sundeck of the 221st Station Hospital, *Bermuda.*

A small station hospital landed with the original troop complement and established itself in the headquarters hotel, where it eventually occupied rooms on ground, mezzanine, second, and third floors. The first patient was received on 23 April. The hospital commander, Col. E. M. P. Sward, also served as surgeon, Bermuda Base Command. He was responsible for the health of all Army troops, including Air Corps, in Bermuda; for U.S. civilian construction workers; and for the on-the-job health of locally procured labor. The Navy had a hospital of its own at the naval base and air station at Kings Point projecting into Great Sound at the western end of the main island.

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of Staff, pp. 481–82; (3) Annual Rpts, Surg, Bermuda Base Comd, 1941, 1942–45; (4) ETMD's, Bermuda Base Comd, Jul 43–Dec 45; (5) Hist Monograph, U.S. Army Base, Bermuda, by N Atl Div, CE, OCMH files; (6) Hist of Preventive Medicine in World War II, Eastern Defense Comd, Tab: Bermuda Base Comd; (7) Med Hist Rcd, Oct 44–Dec 1944, app. L, AAF, N Atl Div, ATC; (8) Ltr, Col. E. M. P. Sward (Ret) to Col Goriup, 27 Jul 59; (9) Ltr, Col Paul A. Keeney (Ret) to Col John Boyd Coates, Jr., 29 Oct 59. Both letters comment on preliminary draft of this chapter.

On 1 December 1942 the base hospital was designated the 221st Station Hospital, with a T/O capacity of 250 beds. Army medical personnel in Bermuda at this time numbered 29 officers and 137 enlisted men; troop strength in the islands was approximately 4,000 climbing to a peak of about 4,500 in March 1943.

The hospital moved from the Castle Harbour Hotel on 1 May 1943 to a new, modern building of concrete and coral only a quarter of a mile from the Air Transport Command terminal at Kindley Field, the newly completed American air base that was the principal installation of Fort Bell. A dispensary previously maintained at the field was closed, but the hospital continued to maintain other dispensaries wherever the troop population warranted.

Since by mid-1943 construction was largely finished and military activities were of a routine nature, the need for hospital beds was beginning to decline. An agreement with the Navy was reached during the summer, and in September 1943 the naval hospital transferred all patients to the 221st Station, preparatory to closing. Thereafter all Navy personnel requiring more than dispensary care, including transients from the Atlantic Fleet, were treated at the base hospital. Col. Paul A. Keeney was hospital commander and base surgeon.

The work load had lightened appreciably before the end of 1943, with troop strength standing at 2,800 in November. As of 1 June 1944, with less than 2,300 U.S. troops still in the command, the 221st Station Hospital was reorganized as a 150-bed unit, and in August 1945 was further reduced to 100 beds. Troop strength was then below 2,000. On 1 January 1946 the hospital passed to control of the Air Transport Command.

Evacuation to the United States was irregular. In the absence of hospital ships or medical air evacuation planes, patients were evacuated by commercial airline or by any available ship equipped with adequate hospital facilities. There might be weeks between planes and months between ships. In these circumstances, the 120-day evacuation policy was sometimes exceeded, and the 221st found it necessary to give more comprehensive medical care than was normal for station hospitals.

In August 1944 Bermuda became a stop on one of the main air evacuation routes from Europe, Africa, the Middle East, and the China–Burma–India Theater. A medical air evacuation detachment consisting of nurses and enlisted men was stationed at Kindley Field to rotate with personnel of incoming planes of the 830th Medical Air Evacuation Transport Squadron. At the Bermuda base, the 221st Station Hospital was responsible for feeding transient patients, treating them where necessary, and, if circumstances required, hospitalizing them. Although the hospital had been reduced to 150 beds before this time, ample accommodations were available. Indeed, in January 1945, when the USAHS *St. Mihiel* ran aground in the vicinity, the 221st Station cared for more than 500 patients of the hospital ship for two weeks. From September 1944 until several months after the end of the war, well over 1,000 patients a month passed through Bermuda on their way to the zone of interior. March 1945 was the peak month with 1,837.

The medical service of the 221st Station Hospital saw only routine cases, with even the venereal disease rate relatively low. The surgical service dealt with a number of accident cases, but the only combat wounds hospitalized there were suffered at sea by personnel of the Atlantic Fleet or one of the Allied naval units based on Bermuda.

U.S. Army Forces in the Azores

U.S. planners in 1941 contemplated the occupation of the Portuguese Azores by a U.S. military force, but the project was postponed in favor of relieving the British garrison in Iceland, where the urgency seemed greater. In mid-1943, after defeat of the German and Italian forces in North Africa and the subsequent conquest of Sicily, the use of the Azores as a link in a new central Atlantic route to Europe, the Middle East, and Asia was definitely planned, pending agreement with the Portuguese Government. In October 1943 the British succeeded in getting permission to use the islands for military purposes under the terms of an old treaty. A British naval base and an air base near Lagens on Terceira Island, were quickly established, and in December American personnel began to share the airfield with the British. This joint occupancy continued until September 1944, when the Portuguese finally gave the United States permission to establish an exclusively American base on Santa Maria Island, about 150 miles southeast of Terceira.[12]

Organizationally, the U.S. base in the Azores was set up as part of the North African theater, but did not long remain in that status. In May 1944, under the designation U.S. Army Forces in the Azores, jurisdiction over American personnel and installations in the islands passed to the Eastern Defense Command. In February 1945 the North Atlantic Division of the Air Transport Command took over control of all U.S. interests in the Azores.

Medical support of U.S. Army troops on Terceira Island consisted initially of a dispensary with evacuation to a British hospital for cases requiring more than a few days' confinement. By February 1944 the dispensary had grown until it occupied several Nissen huts. Other prefabricated buildings were added between February and May. Forty-four regular beds enabled American troops to be hospitalized in their own area, which greatly facilitated the operation of the medical service. In addition, another 35 or 40 beds were available to accommodate evacuees from other theaters on their way to the zone of interior. A 170-bed medical installation was requested by the Azores Base Command, but no such unit was established there until after the war. On Santa Maria Island the Medical Department began operating a dispensary with the arrival of the first troops in September 1944. During the remainder of the year the Medical Department on the island acquired frame buildings and tentage to maintain a 120-bed dispensary. The dispensaries on Terceira and Santa Maria remained in operation through the end of the war and into the postwar period, when the one on Terceira Island became a 50-bed hospital. Both installations had been in effect hospitals from the start, but continued to be called dispensaries because of the reluctance of the Medical Department to assign hospitals to Air Forces commands. They served a combined U.S. troop population that averaged about 1,200, plus an indefinite number of transients.

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[12] Sources for this section are: (1) Matloff and Snell, *Strategic Planning for Coalition Warfare*, pp. 44–45; (2) Hist of the Med Dept, ATC, May 41–Dec 44; (3) Arctic Laboratory, Sep 41–Jan 44, AAF, N Atl Wing, ATC, pt. I, pp. 40–43, pt. II, pp. 1–5, and app. L; (4) Med Hist Rcd Oct 44–Dec 44, AAF, N Atl Div, ATC, pt. I, pp. 30–35, pt. II, pp. 2–6, and apps. K and P; (5) Annual Rpt of Med Dept Activities, Base Hosp, Azores Air Transport Sta, Atl Div, ATC, 1947.

The threat of plague was the most serious medical problem facing the Medical Department in the Azores. It had occurred sporadically for a number of years in all three forms: bubonic, pneumonic, and septicemic. The latter two types invariably proved fatal. All troops destined for the Azores received one inoculation of plague vaccine before departure from the United States and another after arriving in the islands. The Medical Department in the Azores conducted a vigorous rat extermination program and regularly inspected the quarters and all other buildings used by the Army. Not a single case of plague developed among U.S. Army troops in the Azores. Typhoid fever and venereal diseases were two other dangers to the health of troops, but control measures prevented the former and lessened the latter disease. As in most of the other North Atlantic bases, respiratory diseases and injuries accounted for the majority of cases requiring hospitalization.

Air evacuation to the United States through the Azores began on a large scale after the invasion of western Europe. When most of France fell into Allied hands, it was possible to evacuate casualties direct from the Continent to the United States. By the end of 1944 a winter evacuation route using the Azores rather than Iceland was adopted, thus offsetting the disadvantages of cold weather operations in northern latitudes and reducing evacuation time from France to the United States. About 2,000 patients a month passed through the Azores during the winter of 1944–45.

U.S. Army Forces in Eastern and Central Canada

The primary mission of the U. S. forces in eastern and central Canada was to speed delivery of planes to the United Kingdom—first lend-lease planes for the hard-pressed Royal Canadian Air Force, then fleets of bombers and fighters to be flown in combat by American crews. The quickest, and in the long run the safest, way to deliver a plane was under its own power. It needed only a line of bases close enough together to be within the range of fighter craft, and adequate weather information. A direct route for heavy and medium bombers from Newfoundland to Scotland had been pioneered in 1940, but it was hazardous at best. Greenland was the key, and the way was cleared for its use in the spring of 1941. The first U.S. troops in the areas designated for bases in eastern and central Canada were Engineer Corps personnel under direct command of the General Staff.[13]

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[13] Principal sources for this section are: (1) Conn and Fairchild, *Framework of Hemisphere Defense,* ch. XV; (2) Samuel Milner, "Establishing the Bolero Ferry Route," *Military Affairs,* vol. XI (Winter 1947), pp. 213–22; (3) Craven and Cate, eds., *Plans and Early Operations,* pp. 313–18; (4) Colonel Stanley W. Dziuban, *Military Relations Between the United States and Canada, 1939–1945,* UNITED STATES ARMY IN WORLD WAR II (Washington, 1959); (5) Arctic Laboratory, Sep 41–Jun 44, AAF N Atl Wing, ATC, pt. I, chs. 1 and 2, and apps. D, G, H, and K; (6) Med Hist Rcd, Oct 44–Dec 44, AAF N Atl Wing ATC, apps.

The Air Ferry Routes

An air ferry route from Presque Isle, Maine, to Prestwick, Scotland, was well along by the end of 1941. The first hop would be to Gander, Newfoundland, or alternatively, because of crowding at Gander, to Goose Bay, Labrador, where the Canadian Government began construction of an airfield late in September. Bluie West 1 at the southern tip of Greenland, under construction since July, would be the second stop, and Reykjavík, Iceland, the third. Air distances were approximately 570 miles from Presque Isle to Goose Bay, 775 miles from Goose Bay to Bluie West 1, another 775 miles to Iceland, and the final and longest hop of 840 miles from Reykjavík to Prestwick. Fighter planes would need extra fuel tanks, but they would make it. Weather stations established in September 1941 at Fort Chimo in northern Quebec Province, at Frobisher Bay on Baffin Island, and on Padloping Island off the shore of Baffin Island just above the Arctic Circle were to supply information for the guidance of pilots. These weather stations were designated respectively Crystal 1, Crystal 2, and Crystal 3.

The air ferry route through Labrador, Greenland, and Iceland was barely operational when the whole program was revised and enlarged in the middle of 1942. The enlarged project was known as Crimson. Entry of the United States into the war had increased the pressure to get planes to the British Isles, and the entire Eighth Air Force was to be flown to its British base. The new plan in no way canceled out the old, but added to it a route through central Canada that would tap the aircraft production centers in California and the middle west. Stations on the central route would be Great Falls, Montana, The Pas in west central Manitoba, Churchill on Hudson Bay in northern Manitoba, Coral Harbour on Southampton Island just below the Arctic Circle, and thence to Bluie West 8, the northernmost Greenland base, and on to Iceland and Scotland. Additional airfields were to be located at Mingan on the north shore of the Gulf of St. Lawrence, about midway between Presque Isle and Goose Bay, and at the weather posts at Fort Chimo and Frobisher Bay. Nine additional weather observation posts were to be established in the central area.

Work on these arctic bases went forward feverishly during the brief summer season of 1942. Engineer troops were supplemented by Air Corps ground crews as runways neared completion, and before the winter of 1942–43 closed in, nearly 900 planes of the Eighth Air Force were flown to Scotland by one or another of these routes. The number of U.S. military personnel in central and eastern Canada, including those assigned to the Crystal and Crimson projects, climbed from 1,891 in March 1942 to more than 17,000 in August, then dropped abruptly to 2,571. For the first six months of 1943 the average troop strength was about 1,350. By that date the project stage was past. In July 1943 the United States Army Forces in Central Canada was set up as an independent

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D, G, and J; (7) ETMD's, USAFCC, Oct 43–Sep 45, and USAFEC, Oct 43–Sep 44; (8) Annual Rpt, 4th Sta Hosp, 1943; (9) Final Rpt, Surg, USAFCC, 29 Sep 45; (10) Annual Rpt, Surgeon, USAFEC, 1943; (11) Rpt of Inspection, Med Serv, Crimson Project, Eastern Sector, by Brig Gen Albert W. Kenner to TSG, n.d., inspection between 20 and 30 Jul 43.

command. At the same time jurisdiction over the bases in eastern Canada was assigned to the North Atlantic Wing of the Air Transport Command. A theater-type organization, the U.S. Army Forces in Eastern Canada was created early in September, but with little change in anything but name. The Commanding General, North Atlantic Wing, ATC, doubled as Commanding General, USAFEC, until October 1944, when the theater organization was discontinued and the Air Transport Command resumed direct control.

Medical Support on the Air Ferry Routes

No Army hospitals went into either eastern or central Canada until November 1942, when the airfields and weather stations had assumed the character of permanent operating posts. The construction and maintenance crews that had swelled the personnel totals in the summer of that year had been cared for in temporary engineer hospitals and in dispensaries set up by Air Forces medical detachments.

While the eastern route was in use first, the earliest U.S. medical support, other than the transient engineer and air units, went to bases in central Canada. Adequate hospital facilities were available in the eastern sector at Presque Isle, at Gander, and in Greenland. Of the major fields along this route, only Goose Bay was without U.S. hospital facilities, but for the time being the Royal Canadian Air Force hospital there served personnel of both nations.

On the central route, every effort was made to supply medical service for all bases before the winter of 1942–43 brought varying degrees of isolation. A 25-bed dispensary was set up at Coral Harbour, Southampton Island, on 17 August 1942. The 131st Station Hospital, of 100 beds, opened at The Pas on 10 November, and two days later the 4th Station, also a 100-bed unit, got into operation at Churchill. The theater surgeon, Capt. (later Maj.) Michael Q. Hancock, was based at the Winnipeg headquarters of the U.S. Army Forces in Central Canada, where a one-man dispensary supplemented the facilities available in Canadian Army and Air Force hospitals. The various weather observation posts, each in charge of a noncommissioned officer with 5 to 9 men, relied on the skills of medical enlisted men. Emergencies were diagnosed, and treatment was prescribed by radio until one of the theater's 4 medical officers could reach the spot, or until the patient could be brought out.

By the end of 1943, with the submarine menace virtually eliminated and good alternative air routes to share the load, the air ferry route through central Canada declined in importance. The two hospitals were inactivated in December and moved from the theater, each being replaced by a 10-bed dispensary, operated by a medical officer and eight enlisted men. In April 1944 Capt. (later Maj.) Allen G. Thurmond succeeded Hancock as theater surgeon, and was relieved in turn by Capt. Werner Lehmann, formerly post surgeon at Churchill, at the end of the year. The dispensaries at Churchill and The Pas were both inactivated in July, as was the dispensary at Coral Harbour in August. The headquarters dispensary, last U.S. medical installation in central Canada, closed late in September 1944 as the theater itself passed out of existence.

In eastern Canada the 6th Station Hospital (150 beds) was established at Goose Bay in April 1943. In the same month two 50-bed units were opened farther north—the 133d Station Hospital at Fort Chimo, Quebec, and the 134th at Frobisher Bay on Baffin Island. In August a 10-bed dispensary was set up at Mingan, Quebec, south of Goose Bay. The 6th Station, meanwhile, had been reduced to 75 beds. The authorized bed strength of the 133d and 134th Station Hospitals was similarly halved in September. A medical officer and a quantity of medical supplies continued to be maintained on Padloping Island because of its remote and isolated position.

All of the Army medical installations in eastern Canada were withdrawn in July 1944, so that the reorganization of October did not affect the Medical Department as such. Medical service at Goose Bay and such other fields in the sector as remained in use was thereafter exclusively supplied by the North Atlantic Wing, Air Transport Command. The change in command, so far as the medical service was concerned, was nominal, since the wing surgeon, Col. Gordon G. Bulla, had served also as theater surgeon throughout the life of USAFEC.

The problems faced by the Medical Department in Canada were initially those of getting established in an unfamiliar and often inhospitable environment. In arctic and subarctic stations, weather was always a factor. Clothing originally issued quickly proved inadequate, but the men were not long in adopting the Eskimo mukluks, Indian moccasins, or the heavy felt shoes sold by the Hudson Bay Company as preferable to the shoes issued by the Quartermaster. There were similar difficulties with mittens and parkas. Suitable housing for medical installations offered another problem. The 4th Station Hospital at Churchill, for example, occupied buildings without insulation, with unheated corridors, and with cracks in eaves and window ledges through which snow sifted. A modern, completely insulated hospital plant, with hot and cold running water, electric lights, and steam heat was constructed, but owing to labor shortages and low priority it was not finished until January 1944, after the hospital had been inactivated.

In addition to Army and transient Air Forces personnel, all the Army hospitals treated civilian construction workers. Those farthest north also treated local Eskimos and Indians, who were at first sent to the American doctors by the Royal Canadian Mounted Police and later came of their own accord.

Once the difficulties of adjustment were overcome, the health record was remarkably good. Cold injury was a rarity, upper respiratory diseases were less frequent than experience in cold climates would have indicated, and venereal diseases, though by no means unknown, were largely the result of exposures outside of the theater. Even neuropsychiatric disorders—a frequent accompaniment of service in isolated posts—were relatively infrequent.

Evacuation was by plane from the remote areas such as Coral Harbour and Padloping Island, and emergency evacuation was always by plane if feasible. In Manitoba routine evacuation was by rail, with one train a week between Churchill and The Pas, and on alternate days from The Pas to Winnipeg. The more isolated weather stations could be reached only

Colonel Bulla

by planes equipped with skis or pontons, and at times only by tractor or dog sled. A plane normally based in Winnipeg was available on call for emergency evacuation and could be notified by radio when on a mission. Evacuation from the post hospitals and dispensaries was normally direct to Army hospitals in the United States, but Canadian hospitals were always available in emergency.

Medical supplies were adequate, even abundant—at times large surpluses piled up and eventually had to be returned to supply depots in the United States.

The Caribbean Defense Command

The Caribbean Defense Command, authorized by the Secretary of War in January 1941, was officially activated the following month, but its organization was not completed until 29 May 1941. It included the existing Panama Canal and Puerto Rican Departments, and U.S. bases and other Army operations in Central America, the British and Dutch West Indies, the Guianas, Venezuela, Colombia, and Ecuador. For administrative purposes the command was set up with three main subdivisions: a Puerto Rican Sector, a Panama Sector, and a Trinidad Sector. The Puerto Rican and Trinidad Sectors were merged in June 1943. The top command and its administrative divisions supplemented rather than supplanted the existing commands in Panama and Puerto Rico, which remained throughout the war the two major administrative elements in the Caribbean area.

The Caribbean Defense Command had no surgeon until October 1943, when Brig. Gen. (later Maj. Gen.) Morrison C. Stayer assumed the duties as its surgeon, but without giving up his assignment as chief health officer of the Panama Canal Zone. He had been advising the Commanding General, Caribbean Defense Command, informally since the activation of the command. General Stayer was succeeded in both capacities 1 March 1944 by Brig. Gen. Henry C. Dooling.

The Panama Canal Department

By the beginning of World War II the Panama Canal Department had functioned as a military organization for more than a quarter of a century. It was therefore one of the well-established, permanent garrisons of the U.S. Army. Army planners regarded the canal as the keystone of Western Hemisphere defenses. Indeed, as early as 1938 the Chief of Staff had sought to increase the Panama garrison on the ground that troops could be quickly dispatched from the Canal Zone to any threatened area in South America. Basically, however, the Army's mission in Panama was to guard the canal itself from attack by air, sea, or land, and to protect it from raids by enemy commandos or saboteurs. The better to carry out this mission, the jurisdiction of the Panama Canal Department was extended to the various countries of Central America and the Pacific slope of South America as it became necessary for U.S. forces, primarily Air Corps and Engineer Department troops, to move into these areas. The initial task of providing proper defenses also involved the expansion of all the necessary supporting services, including the Medical Department.[14]

GENERAL STAYER

Hospitalization—Military strength in the Panama Canal Department remained at a fairly constant level in the first half of the decade before World War II, ranging between 9,000 and 10,000 troops. In 1936 the average strength rose to about 14,000, where it remained until 1940, when it again increased markedly. Six small hospitals and four dispensaries provided most of the necessary medical service. In 1939 there were approximately 260 dispensary and station hospital beds in the department, but only 50 were actually in a hospital building. The rest were housed with other activities, usually in post administrative buildings, which were noisy and inadequate in size. In addition to these hospitals and dispensaries, which provided beds for less than 2 percent of the command, the

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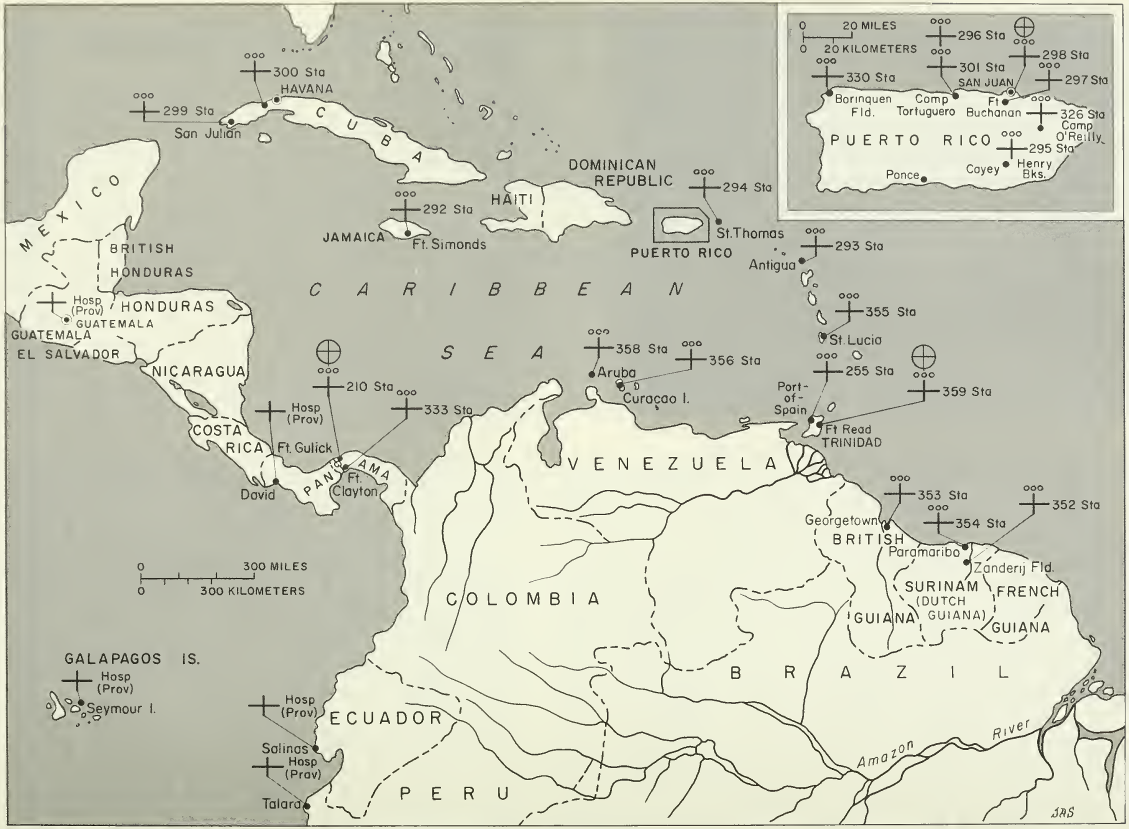
[14] General sources for this section are: (1) Conn, Engelman, and Fairchild, *Guarding the United States and Its Outposts*, ch X; (2) Caribbean Defense Comd, Organization, Development and Reorganization, MS, OCMH files; (3) Hist of the Panama Canal Dept, vols. I–IV, MS, OCMH files; (4) Organization and Reorganization [Panama Canal Dept, 1911–47], MS, OCMH files; (5) War Plans and Defense Measures [Caribbean Defense Comd], MS, OCMH files; (6) Annual Rpt of TSG, U.S. Army, 1940; (7) A Hist of Med Dept Activities in the Caribbean Defense Comd in World War II, vols. I–III; (8) Annual Rpts, Dept Surg, Panama Canal Dept, 1940–45; (9) Clarence McK. Smith, Monograph, Building Army Hospitals in Panama, A Prewar Construction Problem, 1939–1940; (10) Annual Rpts, Off of Surg, Caribbean Defense Comd, 1943–44; (11) ETMD's, Caribbean Defense Comd, Oct 43–Dec 45; (12) Annual Rpts, 218th Gen Hosp, 1941–42; (13) Annual Rpts, 210th Gen Hosp, 1942–43; (14) Annual Rpts, 262d Gen Hosp, 1944–45; (15) Annual Rpt, 333d Sta Hosp, 1943; (16) Historian's Rpt, 368th Sta Hosp, 1946; (17) Rpt of Med Activities, Pan American Highway, to 30 Jun 43; (18) Ltr, Brig Gen Henry C. Dooling (Ret) to Col Goriup, 5 Aug 59; (19) Ltr, Col John W. Sherwood (Ret) to Col Goriup, 2 Aug 59. Both letters comment on preliminary draft of this chapter.



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PANAMA
Ft. Clayton
JAMAICA
292 Sta
Ft. Simonds
HAITI
DOMINICAN REPUBLIC
294 Sta
St. Thomas
PUERTO RICO
293 Sta
Antigua
CARIBBEAN SEA
355 Sta
St. Lucia
358 Sta
Aruba
356 Sta
Curaçao I.
255 Sta
Port-of-Spain
359 Sta
Ft Read
TRINIDAD
VENEZUELA
353 Sta
354 Sta
352 Sta
Georgetown
BRITISH GUIANA
Paramaribo
Zanderij Fld.
SURINAM (DUTCH GUIANA)
FRENCH GUIANA
COLOMBIA
BRAZIL
Amazon River
ECUADOR
PERU
Hosp (Prov)
Salinas
Hosp (Prov)
Talara
GALAPAGOS IS.
Hosp (Prov)
Seymour I.
0 300 MILES
0 300 KILOMETERS
0 20 MILES
0 20 KILOMETERS
330 Sta
Borinquen Fld.
296 Sta
301 Sta
Comp Tortuguero
SAN JUAN
298 Sta
297 Sta
Ft Buchanan
326 Sta
Camp O'Reilly
295 Sta
Cayey
Henry Bks.
Ponce
PUERTO RICO
JRS

MAP 2—U.S. Army Hospitals in the Caribbean

Army had an allotment of some 400 beds in two hospitals operated by the Panama Canal Health Department—the Gorgas Hospital on the Pacific side of the canal and the Margarita Hospital on the Atlantic side. It was the continuous availability of these hospitals—especially the Gorgas Hospital—for handling unusual or difficult cases that kept the medical service at a high level despite inadequate bed strength at the military posts. The policy of allocating beds in the Panama Canal Health Department hospitals continued during the war, but with the allotment reduced to 250 beds after 1943, by which time new Army hospitals had become available. (*Map 2*) The Panama Canal Department surgeon when the United States entered the war was Col. John W. Sherwood, who was succeeded in May 1943 by Col. Wesley C. Cox.

A plan for the construction of permanent Army hospitals in the Panama Canal Zone was developed in 1935 by the Panama Canal Department surgeon in co-operation with The Surgeon General of the Army. Congress approved the plan in 1937, authorizing the construction of a 528-bed hospital at Fort Clayton on the Pacific side of the canal, a 401-bed hospital at Fort Gulick on the Atlantic side, and a 60-bed hospital for the combined posts of Fort Kobbe and Howard Field in the Pacific sector. Funds for the hospital construction program did not materialize until a year later, by which time construction costs had so increased that it became necessary to reduce the capacity of the two larger hospitals by 150 beds each. The War Department approved the plans on that basis in 1939, but there were further delays. The Medical Department was not satisfied that the program as approved was adequate; the governor of the Canal Zone thought the construction of Army hospitals unnecessary; there were delays in the preparation of plans and specifications; funds were inadequate for the number of beds desired; there were difficulties in obtaining materials and equipment; the heavy rainfall hampered construction.

By June 1940 the Panama Canal Department had doubled its 1939 strength, but still no beds were added to the already insufficient number. The bed shortage was reported critical by representatives of the Medical Department returning from the Canal Zone. As an expedient, temporary beds were installed in a converted barracks, while station hospitals were expanded, pending the construction of permanent medical facilities. In general, expansion of the department dictated that hospitals be operated at nearly all posts in the command.

The new Army hospitals at Fort Gulick and Fort Clayton, finally completed in September 1943, opened with rated capacities of 251 and 378 beds, respectively. By making full use of the very spacious porches, the hospitals almost doubled their capacities. A third new hospital, located at Fort Kobbe and ready for use in June 1943, never functioned as originally intended, but served as a dispensary through the war years. The maximum strength of the Army in Panama, about 65,000, had been reached late in 1942, well before the completion of the permanent hospitals. As a result, hospitals operating in converted barracks and other nonhospital buildings cared for the peak loads of patients. With the two largest hospitals completed and occupied by the end of the summer of 1943, the other post, or station, hospitals in the Canal Zone were reduced to dispensaries. The Panama Canal Department had an average of 2,120 beds available during 1943, roughly 4 percent of the average strength of the command.

The Medical Department units that operated the major hospitals in the Panama Canal Department did considerable shifting about, both in place and in designation, because of construction delays and reorganizations. The two largest units, the 210th and 218th General Hospitals, arrived in Panama in January 1942. The 210th upon arriving at Fort Gulick, the site of the new permanent hospital then still in the process of construction, immediately occupied fourteen recently finished permanent barracks on the post and began admitting patients three weeks later. The 218th General Hospital, which was to occupy the new permanent hospital building at Fort Clayton, could not do so because construction on this post was far from completed. Its personnel was thereupon split up and dispersed on temporary duty mainly to post hospitals at Fort Amador and Fort Kobbe on the Pacific side of the canal, and in smaller numbers to several other posts in the Canal Zone, pending the completion of the Fort Clayton hospital.

The 218th General was redesignated the 333d Station Hospital in April 1943, but the hospital's personnel were not brought together until September 1943, when it moved into the newly completed Fort Clayton hospital. It continued operating this plant as the 333d Station Hospital until April 1944, when the unit again became a general hospital with a capacity of 750 beds. The 262d General Hospital, as it was then called, ran the Fort Clayton hospital for the remainder of the war. Over on the Atlantic end of the canal, the 210th General Hospital, which had operated in barracks buildings since January 1942, moved into the new hospital plant on the Fort Gulick post in September 1943. This general hospital was reorganized as the 368th Station Hospital (450 beds), in April 1944, the chief reason being the decrease in the number of troops in the Atlantic sector of the Canal Zone. It continued operating at Fort Gulick throughout the remainder of the war, but was further reduced to 300 beds in December 1944.

The new hospital construction in the Canal Zone followed the pattern of the Gorgas Hospital, that is, tropical construction of reinforced concrete, with broad overhanging eaves on each floor for protection against the sun, and wide porches with jalousies to keep out the driving tropical rains. The solidly constructed buildings compared favorably with any hospital in the United States and satisfied the needs of the Army in Panama for years to come.

In the Central American and South American countries under the jurisdiction of the Panama Canal Department, medical service was supplied largely by small hospitals and dispensaries under control of the Sixth Air Force or the Corps of Engineers. During 1942 hospitals with capacities of 25 beds each were established at David, Republic of Panama; Guatemala City, Guatemala; Salinas, Ecuador, and Talara, Peru. The Air Forces had a 75-bed hospital constructed on Seymour Island in the Galápagos Island group, strategically located 1,000 miles from Panama in the Pacific Ocean, protecting the western approaches to the canal. (*See Map 2.*) All of these hospitals were constructed as temporary, theater-of-operations-type buildings. Eight dispensaries of temporary construction, having 10 beds each, were built at other locations in the Republic of Panama during 1942. Most of the hospitals expanded their capacities during 1943, and an additional 25-bed hospital and two 10-bed dispensaries opened during that year. In 1944 the hospital at David and those in Ecuador and Peru became station dispensaries. Most of the dispensaries had ceased operating by 1945, but three of the hospitals and two dispensaries remained open through the greater part of the year.

Still another Army group maintained a medical service in the area: the Corps of Engineers, who were responsible for building the Pan American Highway. In December 1942 and January 1943 medical personnel arrived to operate dispensaries at various points along the route of the highway in Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama. The health of between 1,500 and 2,500 American workers and technicians employed on the highway, together with that of thousands of local laborers was the chief concern of the Pan American Highway medical service, under the direction of Lt. Col. E. T. Norman. At the end of August 1943 there were 13 medical officers, 2 dental officers, a sanitary officer, and 50 assorted male nurses, attendants, technicians, and pharmacists supporting the highway builders.

Health Problems—Malaria and venereal disease were the two major medical problems in the Panama Canal Department. The work of the Medical Department during 1940–45 succeeded in bringing the admission rates for these diseases down to an all-time low. The admission rate per thousand per year for malaria in 1940 was 57.2. It reached a peak of 116.4 in 1942, but declined steadily thereafter, to the rate of only 9.3 in 1945. A primary factor in the upward spurt early in the war was the establishment of antiaircraft batteries in remote jungle areas; and the removal of troops from screened barracks in sanitated zones to tent camps in more distant locations as a precaution against anticipated air raids. Venereal disease rates amounting to 71.7 per thousand per year in 1940 were also steadily brought down to 17.6 in 1945, the lowest ever recorded in the Panama Canal Department up to that time. The malaria and venereal disease control programs were operated under the guidance of the Medical Department in co-operation with civil health authorities, but basically control measures rested with the individual Army units, whose command responsibility in these matters consisted of thoroughly indoctrinating their personnel.

Medical Supply—Some difficulty was experienced in obtaining medical supplies in adequate quantities during 1940–42, the period of rapid growth of military strength in the Canal Zone. Production facilities were being expanded, shipping was short, and there were many claimants for each item available. In 1942 German submarine activity in the Caribbean was responsible for the destruction of some medical supplies and for delay in the delivery of others. By 1943, however, shortages in medical supplies had disappeared. The system of automatic supply through the shipment of medical maintenance units, which had prevailed during the early period, was

Loading a Sick Soldier Onto a Small Plane *in Darien Province, Panama, for evacuation to one of the Canal Zone hospitals.*

discontinued in September 1943 when the department began making monthly requisitions for all supplies. In common with the usual experience of noncombat areas, an excess eventually accumulated, which was shipped back to the United States in 1943 and 1944. Because of the high humidity, certain medical supplies, notably metal instruments and canvas, were vulnerable to deterioration. The use of dry rooms, equipped with electrical heating units to reduce the moisture in the air, prevented the loss of much valuable equipment.

Evacuation—The volume of evacuation from Panama to the United States never reached a very high level. Hospital admissions consisted largely of disease cases, with a lesser number of injuries, and no battle casualties. Many cases that would have to be evacuated from more isolated areas in the Western Hemisphere could easily be treated in the modern general hospital facilities in the Canal Zone. Proximity to the United States facilitated the evacuation of patients when necessary. A 90-day hospitalization policy existed in the early part of the war, but by 1943 it had increased to a 120-day policy, which, in effect, precluded evacuation unless protracted treatment was needed. In general, only men deemed unfit for further duty were returned to the zone of interior. Within the Canal Zone the Medical Department moved sick and injured men from their units to points of hospitalization by motor ambulance. In most instances this procedure meant a trip of less than twenty miles. Boat evacuation was used to transport patients from installations around Gatun Lake and from otherwise inaccessible locations in the interior of Panama. The Panama Canal Railroad transported most of the patients requiring movement from one end of the canal to the other. The air bases in the Republic of Panama and in Central and South America evacuated their patients to Canal Zone hospitals by air. The department sent most of its ZI patients to New Orleans by ship, but a small number of cases made the trip to the United States by air. The latter method was used especially in those cases requiring an immediate change of environment and climate, or for patients needing very specialized treatment of a type not available in Panama.

Puerto Rico and the Antilles

The U.S. Army had maintained a garrison on Puerto Rico from the time that island was ceded to the United States at the conclusion of the Spanish-American War. In the period before World War II troops there were under the jurisdiction of the Second Corps Area. This attachment to the zone of interior ceased when the War Department established Puerto Rico and the Virgin Islands as a territorial department on 1 July 1939. The Puerto Rican Department, as the new command was named, served a dual role: first, as the most advanced U.S. possession from which American sea and land operations could be projected southward or eastward: and, second, as a forward defensive barrier protecting the eastern approach to the Panama Canal. After the destroyers-for-bases agreement of 1940, the U.S. Army extended its fringe defenses of the canal into other islands in the Caribbean, providing at the same time a defense of the bauxite "lifeline" from the Guianas to Trinidad and the United States. Included were bases leased from the British on Jamaica, Antigua, St. Lucia, and Trinidad, and bases on Aruba and Curaçao leased from the Dutch Government. Other bases for American troops were established in the Guianas and in Cuba, while U.S. soldiers remained for a considerable time in Venezuela, on training mission. The Puerto Rican Department, renamed the Antilles Department in June 1943, absorbed all the above named-areas during the course of the war.[15]

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[15] (1) Conn and Fairchild, *Framework of Hemisphere Defense,* ch. X. (2) War Plans and Defense Measures [Carribbean Defense Comd]. (3) A Hist of Med Dept Activities in the Caribbean Defense Comd in World War II, vols. I–III. (4) Annual Rpts, Med Dept Activities, Puerto Rican Dept, 1941 and 1942. (5) Annual Rpts, Medical Dept Activities, Antilles Department, 1943–45. (6) ETMD's, Caribbean Defense Comd, Oct 43–Dec 45. (7) Annual Rpt, Med Dept Activities, Trinidad Sector and Base Comd, 1942 and 1943. (8) Annual Rpt, Med Dept Activities, British Guiana Base Comd, 1942. (9) Health Service, Caribbean, 1942. (10) Annual Rpts, Sta Hosps, Borinquen Field, P.R., Losey Field, P.R., Ft. Read, Trinidad, and Aruba, N.W.I., 1942. (11) Annual Rpt, 161st Gen Hosp, Ft. Brooke, San Juan, P.R., 1945. (12) Annual Rpt, Med Dept Activities, U.S. Army Forces in Surinam, 1942. (13)

Puerto Rico eventually had the largest concentration of U.S. Army troops in the Caribbean, outside the Panama Canal Zone. When formed as a territorial department in July 1939, the total strength amounted to 931 officers and enlisted men, serving at the main post of Fort Brooke in San Juan and at the subpost of Henry Barracks near Cayey. By December the strength had risen to 2,913 and continued upward through 1940, reaching more than 13,000 in December of that year. These troops were divided among six posts in Puerto Rico and one in the Virgin Islands. Army strength in the Puerto Rican Department continued to enlarge beyond any legitimate military need, mainly because the operation of the Selective Service System brought more Puerto Ricans into the Army than could be used elsewhere. Military strength doubled in 1941 over that of the previous year and doubled again during 1942. At the time of the formation of the Antilles Department, the command had a strength of over 50,000. It reached a peak of more than 57,000 in September 1943, which amounted to only about 8,000 less than the maximum strength attained by the Panama Canal Department.

Hospitalization—The most important prewar Medical Department facility in Puerto Rico was the old station hospital at Fort Brooke housed in buildings turned over to the United States by the Spanish Government at the conclusion of the Spanish-American War. The hospital buildings dated back to the 18th century, but during the course of World War II, approximately a million dollars was spent to modernize and improve the buildings and to make them more suitable for modern hospital use. In 1941 the hospital had a capacity of about 600 beds and acted as a general hospital for the entire Puerto Rican Department. At Fort Buchanan, about seven miles south of San Juan, another station hospital, originally activated as a medical detachment on the post of Fort Buchanan in October 1939, became the post hospital in late 1941, with a capacity of 150 beds. *(See Map 2.)*

Borinquen Field, the main air base, located in the northwest corner of Puerto Rico, had a Medical Department dispensary servicing the field from the time the first troops arrived there in September 1939. In May 1941, a 150-bed station hospital began operating at the field. Another airfield, known as Losey Field, situated near Ponce in the south central part of the island, was the location of a 100-bed station hospital, which began operating for the garrison there in April 1941. The old established post of Henry Barracks served as a subpost of Fort Brooke until December 1939. In March 1940, a station hospital of 10 beds was established for the post, and by October of 1941 it had a capacity of 55 beds. Most troops stationed at Camp Tortuguero, a post in the northern part of the island west of San Juan, used the Fort Brooke station hospital. A hospital ward, completed at Camp Tortuguero in July 1941, took care of mild medical and surgical cases. A dispensary, opened in March 1941, administered to the needs of the garrison at Benedict Field, located on St. Croix, Virgin Islands.

In the year before Pearl Harbor, the Medical Department had operated these

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Ltr, Col Dean M. Walker (Ret) to Col Goriup, 18 Jul 59, commenting on preliminary draft of this chapter.

seven stations with a minimum of personnel. There were less than 400 officers and enlisted men of the Medical Department in the command at the beginning of 1941, but the number had more than doubled by the end of the year. Col. Walter P. Davenport was the surgeon of the Puerto Rican Department.

Growing troop strength in Puerto Rico in 1942 resulted in the expansion of most existing medical facilities and the establishment of others. The Medical Department had little choice in the selection of hospital sites since medical installations had to be located at points where large concentrations of troops existed. New hospital construction in Puerto Rico and other islands of the Antilles was characterized by the use of temporary, wooden, theater-of-operations-type structures. Where a post was planned as a permanent military installation, as in the case of Borinquen Field, hospital construction was eventually of a permanent type.

The main hospital at San Juan increased its capacity to 750 beds during 1942. To it were evacuated all neuropsychiatric patients in the department, all cases requiring lengthy hospitalization, and all those destined for the zone of interior. Most of the other hospitals increased their capacities in 1942, and a new 100-bed station hospital, completed during the year, began serving the troops stationed at Camp O'Reilly in eastern Puerto Rico near the town of Gurabo.

In late 1941 and 1942 garrisons were sent to Jamaica and Antiqua after the Puerto Rican Department was expanded to include these British islands. Temporary hospitals of 25 beds each served the U.S. Army troops there. A small hospital of 18 beds was established on St. Thomas, Virgin Islands, in 1942, and the dispensary that had operated on the island of St. Croix became a 25-bed hospital during the same year.

Medical service in the southern half of the Caribbean area, which included bases in Trinidad, St. Lucia, Aruba, Curaçao, British Guiana, and Dutch Guiana, did not come under the jurisdiction of the headquarters in Puerto Rico until the establishment of the Antilles Department in June 1943. Prior to that time, U.S. bases in the area were under the jurisdiction of the Trinidad Sector and Base Command, of which Col. Dean M. Walker was surgeon. American troops moved into Trinidad, southern anchor of a defensive arc that included Newfoundland and Bermuda, in May 1941, but for several months had no medical support other than that supplied by their own medical detachments, backed up by British hospitals. In December 1941 construction was begun on a plant to house a 500-bed station hospital at Fort Read, the principal U.S. base on the island, but it was September 1942 before the hospital opened. By that date an additional temporary hospital plant was under construction to provide transient hospitalization should it be necessary to evacuate substantial numbers of casualties from the forthcoming invasion of North Africa. Since operations in Morocco and Algeria produced only a minimal number of casualties, the temporary hospital was never called upon to serve its original purpose. The main unit meanwhile was redesignated on 1 December 1942 as the 41st General Hospital, and was to have an ultimate capacity of 1,000 beds. The first commanding officer was Col. John A. Isherwood.

The 41st General Hospital served as

regional unit for the whole command, taking patients from all the southern Caribbean and the Guianas. It was supplemented at Port-of-Spain, Trinidad, by a small 20-bed unit established early in 1941 and supplanted in the spring of 1942 by a 200-bed hospital activated as the 255th Station Hospital on 1 January 1943. Both Trinidad hospitals were constructed of wood and regarded as semipermanent structures. St. Lucia had a 25-bed permanent Army hospital, which began operating in November 1942. On the two Dutch islands of Aruba and Curaçao, the Army maintained station hospitals of 75 beds each beginning in early 1942. The base in British Guiana had a 50-bed permanent-type station hospital located at Atkinson Field, near Georgetown. Two station hospitals operated at bases in Dutch Guiana, one 50-bed unit at Paramaribo and a 25-bed hospital at nearby Zanderij Field. (*See Map 2.*)

Coincident with the creation of the Antilles Department in June 1943, many of the post hospitals scattered along the Caribbean island chain and the north coast of the South American mainland were activated as numbered station hospitals, often with T/O bed capacities in excess of those then existing. The post hospital at Fort Simonds, Jamaica, became the 292d Station Hospital, with a capacity of 75 beds. At Antigua the post hospital was converted into the 293d Station Hospital, also of 75 beds. The 294th Station (25 beds) absorbed the post hospital at St. Thomas, Virgin Islands. In Puerto Rico the 295th Station Hospital, of 150 beds, supplanted the post hospital at Henry Barracks; the Camp Tortuguero hospital was redesignated the 296th Station (50 beds); at Fort Buchanan the 297th Station (75 beds) replaced the existing unit; and the 100-bed hospital at Camp O'Reilly was redesignated the 326th Station Hospital with a T/O of 250 beds. Two new station hospitals were also established in Cuba supplanting earlier installations: the 299th (150 beds) at San Julián, and the 300th (50 beds) at Batista Field. Most important of the midyear designations was that of the post hospital at San Juan, which became the 298th Station Hospital with an authorized capacity of 600 beds. Attached to it in September was the newly activated 301st Station Hospital (100 beds) which was moved to Losey Field when the Air Forces resumed operations there in June 1944. At that time the unit was reduced to 25 beds.

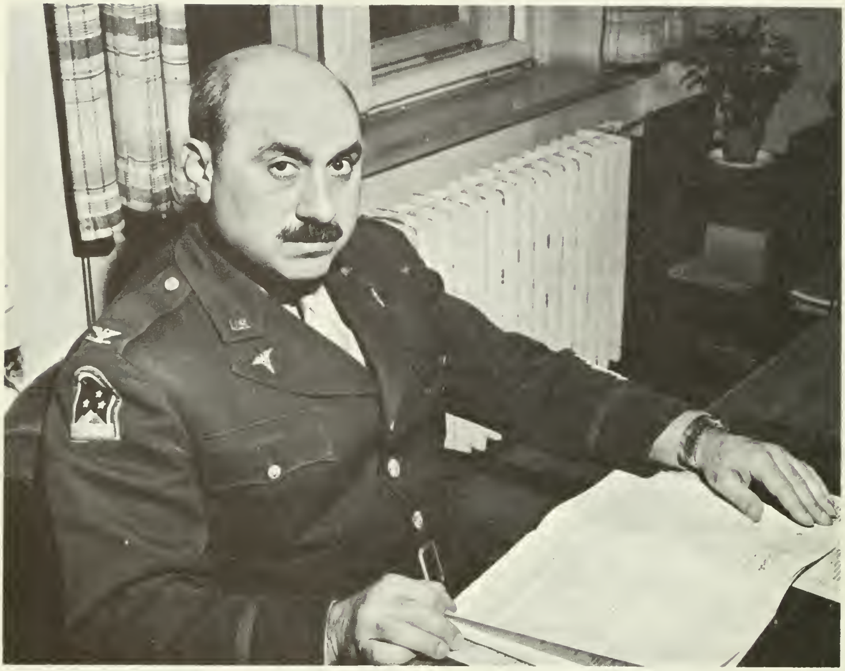
Another group of hospitals had their designations, and sometimes their sizes, altered in November 1943. These included the post hospital at Borinquen Field, Puerto Rico, which became the 150-bed 330th Station Hospital; the 41st General Hospital at Fort Read, Trinidad, which was redesignated the 359th Station Hospital with a T/O strength of 600 beds; and the small post hospitals at Zanderij Field, Surinam (352d Station, 25 beds) ; Atkinson Field, British Guiana (353d Station, 75 beds) ; Paramaribo, Surinam (354th Station, 50 beds); St. Lucia, British West Indies (355th Station, 50 beds) ; Curaçao, Netherlands West Indies (356th Station, 75 beds); and Aruba, Netherlands West Indies (358th Station, 50 beds) .

With the Axis virtually no threat to the Western Hemisphere by mid-1943, except for occasional U-boat raids on shipping, the strategic importance of Puerto Rico and other islands in the Caribbean declined. The Medical Department was at peak strength when the Puerto Rican Department and the Trinidad Sector were merged to form the Antilles Department, with Col. Clyde C. Johnston as its surgeon. There were at this time more than 2,200 officers and enlisted men serving in medical installations from Cuba through the Guianas. A steady contraction began in 1944, which continued to the end of the war. The 298th Station Hospital at San Juan became the 161st General Hospital in June 1944, serving the entire Antilles Department, but its T/O still called for only 600 beds. Other hospitals throughout the area reduced bed strength, converted to dispensary status, or disbanded altogether. By the end of 1945, only nine hospitals remained in the Antilles Department, with a total of 1,225 beds. The 161st General Hospital in San Juan, with 600 beds, accounted for almost half of the total. Outside Puerto Rico only the 292d Station Hospital (25 beds) in Jamaica, the 300th (25 beds) at Batista Field in Cuba, and the 359th on Trinidad remained in operation.

Evacuation—Evacuation activities in the Antilles Department followed a pattern much like that of the Panama Canal Department. It was necessary to evacuate only a small number of men during the entire war. Within the various island bases, men needing medical attention were taken to the nearest dispensary or hospital, usually by ambulance but occasionally by air in the case of isolated units. Further evacuation to a larger hospital was normally accomplished by ship, although air transport came into play if great distances were involved. The large hospitals in Puerto Rico and Trinidad enabled the Antilles Department to give fairly definitive care to most serious illnesses, and since the situation was not one of combat there was no pressing need for evacuation to the zone of interior. About half of the patients moreover, were Puerto Ricans, and so would not normally have been evacuated to the mainland under any circumstances.

Medical Supply—Problems of medical supply in the Antilles proved similar to those in Panama, but tended to be somewhat more difficult in the early days. The lack of a well-developed military establishment in Puerto Rico at the beginning of the emergency period in 1939 and the extreme dispersion of island bases in the Antilles were important factors in creating supply problems. The absence of a major United States activity comparable to the Panama Canal also complicated matters. The new island bases felt the scarcity of supplies in the early days of the war much more strongly than the established facilities in Panama.

Common Diseases—As in Panama, the two major health problems throughout the Antilles Department were malaria and venereal disease, and in both cases the answer was found in improved preventive measures. The malaria rate for the department as a whole was cut from 84 per thousand per annum in 1941 and 88 in 1942 to 37 in 1943, 12 in 1944, and 9 in 1945. Measures taken included larviciding, drainage, use of atabrine, and constant education and experimentation. A unique problem existed around Fort Read, Trinidad, where a water-catching parasite on shade trees planted to protect the cocoa plantations proved a prolific breeder of mosquitoes. It was eventually discovered that a copper sulfate spray



Colonel Leone

would destroy the parasites. In the fight against venereal disease, eternal reiteration of the danger was primary, together with the establishment of well-located prophylactic stations and steady co-operation with local authorities where local laws and customs permitted some measure of control. The venereal rate was reduced from 81 per thousand per annum in 1942 to 72 in 1943, 47 in 1944, and 31 in 1945.

The South Atlantic Theater

It was clear to U.S. and Brazilian military leaders by the summer of 1939 that only the United States could provide the forces necessary to defend the Brazilian bulge in the event of an attack from Africa, a short 1,800 miles across the South Atlantic. Military planning in both countries accepted this reality, although Brazil accepted it with reluctance. The fall of France a year later and the subsequent control of French West Africa by the collaborationist Vichy regime, gave renewed urgency to preparations for defense of the strategically most vulnerable point in the hemisphere. Army and Navy staff agreements were negotiated in the fall of 1940. By specific agreement between the two countries in the spring of 1941, Pan American Airways undertook development of airfields in Brazil at Amapá, Belém, São Luís, Fortaleza, Natal, Recife, Maceió, and Bahia. Such a route, jumping off from bases in the Guianas, would permit even short-range planes to fly to the threatened sector. The work had hardly gotten under way before Pan American, at the request of the U.S. Government and with Brazilian concurrence, undertook to ferry lend-lease planes to British forces in the Middle East.[16] After U.S. entry into the war, the South Atlantic ferry route passed to military control. Plans were prepared for setting up a theater of operations in Brazil, but were not realized until after Brazil, too, had declared war on Germany and Italy, 22 August 1942.[17]

The theater organization had its inception in late June 1942, under the aegis of the South Atlantic Wing, Air Transport Command, of which Brig. Gen. Robert L. Walsh was commanding officer and Maj. (later Col.) George E. Leone was surgeon. Wing headquarters was set up at Atkinson Field, British Guiana, on 9 July, moving to Recife, Brazil, in December after formal activation of United States Army Forces, South Atlantic, on 24 November 1942. A few days earlier the Air Transport Command had established its own headquarters at Natal, but the two headquarters were bound together by having the same commander. General Walsh served in both capacities, as did Maj. Gen. Ralph H. Wooten, who relieved Walsh in May 1944. In October of that year, however, the two commands were separated at the request of the Air Transport Command. General Wooten continued as theater commander, while the South Atlantic Division, ATC, passed to Col. Cortlandt S. Johnson. Leone, on the other hand, was replaced as ATC South Atlantic Wing surgeon when he took over the theater surgeon's office. The two positions remained separated until August 1943, when Leone was again named to the ATC post while retaining his position as USAFSA surgeon. He had in the interval returned to the United States long enough to attend the School of Aviation Medicine at Randolph Field, Texas, in order to qualify as a flight surgeon. Throughout the life of the theater close liaison was maintained with the medical service of the Fourth Fleet, and with Brazilian doctors, military and civilian.

During the British Guiana interlude, Leone, who was promoted to lieutenant colonel at this time, surveyed the medical situation in Brazil. Valuable information, particularly as to the incidence of malaria and venereal disease, was secured from the two U.S. flight surgeons already stationed at Brazilian airfields—Capt. Fred A. Heimstra at Natal and 1st

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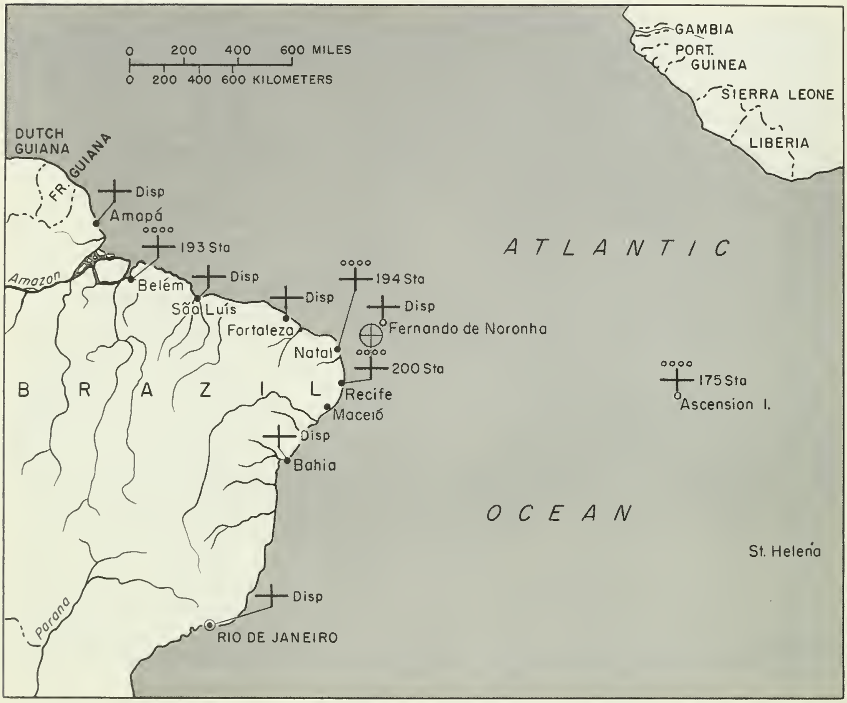
[16] See p. 360, below.

[17] The main sources for this section are: (1) Watson, *Chief of Staff*, ch. IV; (2) Conn and Fairchild, *Framework of Hemisphere Defense*, chs. XI, XII; (3) Hist, USAFSA, MS, OCMH files; (4) Official Hist of the S Atl Div, ATC, MS, OCMH files; (5) Med Hist, World War II, USAFSA; (6) Annual Rpts, Med Dept Activities, USAFSA, 1942–44; (7) Annual Rpt, Med Dept Activities, S Atl Div, ATC, 1944; (8) Annual Rpt, Surgeon, Composite Force 8012, Ascension Island, 1943; (9) Annual Rpts, 175th Sta Hosp, 1943 and 1945; 193d Sta Hosp, 1943–45; 194th Sta Hosp, 1943–45; and 200th Sta Hosp, 1943–45. (10) ETMD's, USAFSA, Jul 44–Oct 45; (11) A Med Hist of the Brazilian Expeditionary Force in Brazil, by Maj R. H. Lackay; (12) Ltr, Col George E. Leone, to Col Goriup, 30 Jul 59; (13) Ltr, J. P. Cameron, to Goriup, 5 Aug 59; (14) Ltr, Frank P. Gilligan, to Goriup, 18 Aug 59. Last three letters comment on preliminary draft of this chapter.


0 200 400 600 MILES
0 200 400 600 KILOMETERS
GAMBIA
PORT. GUINEA
SIERRA LEONE
LIBERIA
DUTCH GUIANA
FR. GUIANA
Disp
Amapá
193 Sta
Amazon
Belém
Disp
São Luís
Disp
Fortaleza
194 Sta
Disp
Fernando de Noronha
Natal
200 Sta
ATLANTIC
175 Sta
Ascension I.
BRAZIL
Recife
Maceió
Disp
Bahia
OCEAN
St. Helena
Disp
Parana
RIO DE JANEIRO

Map 3—U.S. Army Hospitals Supporting South Atlantic Bases, 1943–45

Lt. Francis M. Dougherty at Belém. The successful invasion of French North Africa at that time by American and British ground troops removed any danger that may still have existed of an attack against the South American mainland.

Hospitalization

Other than small dispensaries set up at stopping points along the Air Transport Command route, there were no U.S. Army medical facilities operating in Brazil until after activation of the theater. Patients requiring more care than these dispensaries could provide were generally flown to British Guiana or Trinidad. Emergency surgery was performed in Brazilian military hospitals.

In his capacity as surgeon, USAFSA, Colonel Leone asked for three station hospitals in October 1942, but the units requested did not leave the port of embarkation until 29 December, arriving in Brazil in late January 1943. The hospitals were distributed to the major bases of the theater—the 193d Station Hospital (50 beds) to Belém, the 194th Station Hospital (100 beds) to Natal, and the 200th Station Hospital (150 beds) to Recife. None of the hospital buildings had been completed at the time the units arrived, but by May and early June all began operating. The 175th Station Hospital (150 beds), arrived on Ascension Island, some 1,250 miles east of the Brazilian coast, in March 1942, before the creation of the South Atlantic theater. The U.S. Army had landed some 2,000 men on this British possession with the mission of protecting it from attack and building an airfield. The 175th was under the control of a composite force headquarters until November 1942, when the South Atlantic theater assumed jurisdiction over U.S. troops on the island. (*Map 3*)

Hospital construction in Brazil followed closely the standard U.S. Army cantonment-type plant common in the United States. The use of local materials, especially hollow tile blocks, which were stuccoed on the outside and plastered on the inside, and red tiles for roofing, resulted in more permanent structures than the wooden ZI-type station hospitals. The 193d Station Hospital at Belém, just below the mouth of the Amazon River, was situated in a tropical location almost on the equator. It furnished care to the immediate area and received patients from the jungle air base at Amapá, the airfield at São Luís, and weather stations at Clevelândia and Camocim.

Nine hundred miles east on the Brazilian coastal "hump," the 194th Station Hospital at Natal administered medical care to patients from the air bases at Fortaleza, Fernando de Noronha Island, and from the vicinity of Natal itself. The 194th also accommodated all patients en route from other theaters to the United States. It was a very active unit because of the great number of transients and daily landings and takeoffs.

The 200th Station Hospital, just 150 miles south of Natal near the city of Recife, served as a "theater" hospital since no general hospital operated in Brazil. It received patients from all other medical installations in the command that required prolonged hospitalization or ultimate evacuation to the United States. The 200th was especially well equipped and had a very well-balanced professional staff. Specialists from the 200th made trips to other stations in the theater where they consulted on patients who could not be transferred to Recife. The hospital laboratory was supplemented to function as a provisional theater laboratory.

On Ascension, the steppingstone between Brazil and Africa, the 175th Station Hospital had started operating in a newly constructed hospital in May 1942, providing medical care for U.S. Army and Navy personnel stationed there, transients passing through, and survivors of torpedoed ships. Its buildings consisted of wood-frame tarpaper-covered structures, which lasted satisfactorily through the war. Except for a very small dispensary operated by a retired British naval officer, no other medical facility existed on the island. The 175th ministered to about one-fourth of the total strength of the South Atlantic theater.

The medical service for the South Atlantic theater maintained itself with a minimum of personnel, but still made medical care equally available to all permanent and transient Army personnel, as well as to members of the U.S. Navy and certain civilians at each base. The theater strength reached its wartime peak of about 8,000 in January 1944. There were approximately 600 Medical Department personnel in the theater at that time, and an aggregate of 500 T/O beds in fixed hospitals.[18] In keeping with a declining military population, medical strength was cut to 450 in July 1944 when the 175th Station Hospital on Ascension was reduced to 100-bed capacity; and to 350 in November when the 175th lost another 50 beds and the 200th Station at Recife was reduced to 100 beds. In addition to the beds provided by the station hospitals, dispensaries of from 10 to 20 beds each operated at Amapá, São Luís, Fortaleza, Bahia, Fernando de Noronha, and Rio de Janeiro. Except for the unit at Rio, which existed primarily to provide medical care to U.S. personnel of the Joint Brazil-United States Military Commission, these dispensaries were operated by medical personnel of the Air Transport Command. At Clevelândia, Camocim, and Pôrto Alegre, very small stations where a dispensary could not be justified, Medical Department enlisted men provided emergency medical care.

Evacuation

While there was limited air evacuation of nonbattle casualties from Africa, the Middle East, and even from the China–Burma–India theater before the beginning of 1943 over the air ferrying route by way of Brazil, it was on an individual basis and records as to its extent are not available. Similarly, patients were flown informally from Brazil to British Guiana or Trinidad without being officially recorded. As the war in the Mediterranean spread during 1943 from Africa to Sicily and Italy, air evacuation through Brazil became more general. Late in September of that year the 808th Medical Air Evacuation Transport Squadron took over the flights from northern Brazil to Miami, continuing in operation until the patient load declined sharply late in 1944. All together, 957 patients from other theaters passed through the South Atlantic theater by air on their way to the zone of interior in 1943, and 2,092 in 1944. Only 165 patients followed the Brazilian route in 1945 before the service was discontinued in July in favor of the more direct North Atlantic routes.

For the South Atlantic theater itself, the evacuation policy for all hospitals, except the 200th Station Hospital, was 60 days. Other hospitals sent patients whose condition precluded recovery within this period to the 200th for more extended treatment, or for evacuation to the United States if recovery within 120 days seemed unlikely. Because of the abundance of air transportation available, patients usually traveled to the United States by plane. A smaller number, notably mental cases, sailed aboard ships from the port of Recife. In 1943 the number evacuated from the South Atlantic theater to the ZI was 189, of whom 29 went by sea; in 1944 there were 78 evacuated by water and 268 by air, or a total of 346; and in 1945 the figures were 64 by sea and 151 by air, for a total of 215. The 3-year aggregate was 750, with more than three-fourths being sent by air.

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[18] See app. A–1. Theater strength exceeded 10,000 for the immediate postwar months of June, July and August 1945, when evacuation from the Mediterranean and redeployment brought about a substantial increase in Air Transport Command strength at Brazilian bases.

U.S. medical officers and enlisted Medical Department personnel helped train Brazilian medical troops before the departure of the Brazilian Expeditionary Force for Italy in July–November 1944, but neither time nor facilities were available to do a completely satisfactory job. Medical personnel of the theater also assisted the Brazilian Army by unloading sick and wounded members of the Brazilian Expeditionary Force returning from Italy by ship and plane.

Medical Supply

In the early days the theater experienced some difficulty in procuring medical supplies in sufficient quantities, but by mid-1943 enough stocks had been accumulated to meet the needs of all medical installations in the command. In only two instances were large shiploads of supplies from the United States delayed for so long that emergency air shipments had to be made. A general depot established at Recife in early 1943, provided medical supplies for the entire theater and distributed them to the widely separated medical installations of the command by air and sea transportation. Most items of supply came from the United States, but the Army bought some of the heavier equipment such as chairs, desks, tables, and X-ray units, and also a small quantity of drugs from Brazilian dealers. Before the Recife depot was established, the Trinidad Sector depot at Fort Read was often called upon to send medical supplies both to Brazil and to Ascension Island.

Professional Services

Common Diseases—Because of the absence of land combat in the South Atlantic theater, the operation of a satisfactory hospital system posed no unusual difficulties. The operation of medical installations was generally routine, with emphasis on the control of venereal and tropical diseases. Patients stayed in the hospital for only short periods, since acute diseases of brief duration accounted for most of the admissions. Injuries from plane crashes and other accidents made up the remainder. The general health of the troops was excellent, and tropical diseases never became a problem, due mainly to the preventive measures employed by the Medical Department. The largest single medical problem was the great reservoir of venereal disease near the U.S. Army bases. Prostitution flourished freely with very little being done about infected carriers of venereal diseases. Control measures proved difficult because the Army, being only a visitor in a friendly foreign country, did not have control over the civilian population. Areas and individual houses could be placed "off limits" but residents of these houses could and did find other places to carry on their trade. Consequently, the Army directed its control program at the individual soldier by means of education. The incidence of venereal disease on Ascension Island was zero because of the absence of women, but for the theater as a whole the venereal rate was 83 per thousand per annum for December 1942, averaged 101 for 1943, and 72 for 1944. The rate dropped to a low of 36 in May 1945 but shot up again to 99 in August with the influx of transients. The everpresent danger of malaria in northeastern Brazil resulted in a vigorous control program in collaboration with the Brazilian

Members of Malaria Control Unit Spraying a Swamp Area in Brazil

health authorities. Individual malaria control measures were also practiced with highly successful results. At no time did malaria become a serious threat to the physical fitness of U.S. Army troops in the theater, although the rate per thousand per annum reached a high of 98 in March 1943. The worst month in 1944 was June, when the rate was 34. The 1945 peak was reached in May and June, with rates of 24.9 and 27.2, respectively.

A good example of how the Army overcame the deteriorative effects of tropical diseases in Brazil was the work accomplished by the Medical Department at the jungle outpost of Amapá. This location is among the most unfavorable of any in the world for the maintenance of good health. During 1943 the rainfall measured around fifteen feet, and in 1944 it totaled almost thirteen feet. The entire swampy area was alive with malaria, which took a heavy toll among personnel of survey teams entering the vicinity in 1942. A small dispensary that arrived there in early 1943 helped keep the state of health of Army troops and Brazilian workers on a reasonably high level, mainly because of immediate evacuation to Belém of all patients needing bed care. During 1944 the dispensary's staff increased, and more supplies and equipment arrived, which made it possible to care for many more patients on the spot. The men assigned to the dispensary had to be versatile. Each enlisted medical assistant was at some time a laboratory technician, nurse, or even a doctor. In 1944 the base surgeon delivered six babies for Brazilian workers, and in every case the enlisted men assisted the surgeon during delivery.

The Brazilians at the Amapá base suffered from many chronic diseases rarely found among American soldiers. The surgeon explained each case entering the dispensary to the enlisted assistants, who were required to participate in the treatment. With all the bad environment caused by the heat, tremendous rainfall, and poor sanitation of the local population, the dispensary records showed only 600 per thousand illnesses or injuries among Army personnel, which amounted to 131 per thousand less than the South Atlantic theater rate as a whole. Not a single case of malaria developed among American troops during 1944, despite the fact that this disease had previously been highly endemic. At the end of that year this small group, composed of one officer and four enlisted men, were giving valuable medical service to approximately 1,000 people.

The Disinsectization Program—In 1930 a very severe epidemic of malaria had ravaged the area around Natal. The disease proved to be carried by the *Anopheles gambiae* mosquito, a species common in equatorial Africa but previously unknown in Brazil. It was believed that the vector had been introduced by fast French destroyers from Dakar. It had taken ten years of hard work on the part of the Brazilian Health Department to stamp out the *gambiae*, and the Brazilian Government was not prepared to see the scourge reintroduced by aircraft from infested areas of Africa.[19]

Colonel Leone and his staff worked on the problem with Brazilian health officials, representatives of the Rockefeller Foundation, and ground and air commanders. Brazilian officials were not satisfied with the routine spraying of planes after they had landed in Brazil. Between October 1941, when Pan American Airways began its flights between Brazil and Africa, and July 1942, when U.S. Army medical service was established in Brazil, *gambiae* were found on seven occasions on planes arriving in Natal from Africa. As a result aircrews were given strict regulations on the subject, which included spraying before departure from Africa. Early in 1943, by Presidential decree, the Brazilian health authorities took over responsibility for ridding incoming planes of arthropods. Procedures were stringent, including the closing of all vents and shutting off air renovation apparatus before the plane landed, and disinfestation before any passengers or crewmen were allowed to deplane or any freight was unloaded. In August Colonel Leone accompanied Dr. Fabio Carneiro de Mendonca, Director of the Brazilian Port Sanitary Service, on a visit to Africa to study conditions at the fields from which planes left for Brazil. At a conference early in November 1943, it was agreed that U.S. Medical Department personnel should supervise the disinfestation at African points of departure, and that qualified Brazilian observers should be present at these points, most important of which were Dakar and Accra.

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[19] Elliston Farrell, "The Anopheles Gambiae Problem in Brazil and West Africa, 1941–44," Bulletin, *U.S. Army Medical Department,* vol VIII, (February 1948), pp. 110–24.

With these practices in effect, the record was impressive. In 1943, *gambiae* were found on 100 out of 819 planes from Africa. The total number of *gambiae* found was 281, of which 8 were still living. Although the number of flights increased in 1944 to 2,552, only 30 *gambiae,* one living, were found, distributed among 9 planes. In 1945 only 9 *gambiae* were found, all of them dead, distributed among 9 planes out of 4,841.

Dental Service—Dental service began in the South Atlantic before a theater organization was set up. On Ascension Island there was a dental officer with the 175th Station Hospital, but early arrivals at the Brazilian bases relied on local civilian dentists until September 1942. At that time 1st Lt. (later Maj.) Julian M. Rieser of the Air Transport Command arrived with one incomplete Chest MD No. 60. Deficiencies were made up by local purchase or improvisation, and Lieutenant Rieser established his headquarters at Natal, flying the rounds of the other bases.

The station hospitals arriving early in 1943 had dental officers on their staffs but little or no dental equipment. The dentist attached to the 193d Station Hospital at Belém was unable to function until March. The dental officer of the 200th Station Hospital at Recife carried on as best he could in the field dispensary set up by the Air Transport Command until enough equipment was received from the United States to open the hospital dental clinic in May. The 194th Station was somewhat more fortunate in procuring equipment for its dental officer, whose presence freed the ATC Wing dental surgeon for more extended visits to other bases.

For a time the dentist of the 194th Station also served as theater dental surgeon. In September, with additional dental officers available, a policy of rotation was put into effect, and dentists were shifted from one base to another. At this time Rieser, now a captain, became theater dental surgeon with headquarters in Recife. By the end of 1943 there were eight dental officers in the theater, and equipment was adequate to maintain a clinic at each of the four station hospitals. Complete dental service was available to the entire command and continued to be throughout the remaining life of the theater. The number of dental officers increased to 10 in 1944, and the service became more mobile, dental officers going as far afield as Asuncion, Paraguay, and Montevideo, Uruguay.

Veterinary Service—Like his dental counterpart, the first veterinary officer in the theater, Capt. (later Maj.) James R. Karr, was assigned to the South Atlantic Wing, Air Transport Command. Captain Karr reached Natal in November 1942 and was at once placed on detached service in the theater surgeon's office. Additional veterinary officers arrived in 1943, together with a few trained enlisted men. Their task, in a country of lax sanitary standards, was immense. All meat, eggs, milk, and many other food products had to be inspected before they could be used. Supervision of slaughterhouses and pasteurization plants was included in the veterinarians' work, and before the end of 1943 they were themselves raising chickens and hogs.

For purposes of food inspection, the

Brazilian bases were divided into three areas, centering at the three station-hospital cities. The Belém area included the Amapá and São Luís bases; the Natal area included Fortaleza and Fernando de Noronha; and the Recife area included Bahia. One veterinarian served each area, the Recife man serving also as theater veterinarian and making trips as needed to Ascension Island.

Close-out in Brazil

The Army started planning a general reduction and eventual discontinuance of its activities in Brazil and on Ascension Island in March 1945. The Green Project, which was an air redeployment movement of combat troops from the European and Mediterranean theaters to the United States, for transshipment to the Pacific, suddenly increased activities in the South Atlantic during that summer, but this operation came to an end after the defeat of Japan. Almost half of those sent to the United States under the "Green Project" traveled via the South Atlantic theater. Medical facilities handled the extra load by obtaining additional medical personnel from the Air Transport Command and from among those being redeployed. In early September, preparations for inactivating all station hospitals began, and the plans made the previous spring were put into operation. By the end of the month the 175th and 193d Station Hospitals had been inactivated, followed by the 194th and 200th in early October. The theater itself disbanded on 31 October 1945, and the South Atlantic Wing of the Air Transport Command assumed responsibility for the administration and operation of the remaining personnel and facilities.

CHAPTER II

Army Medical Service in Africa and the Middle East

The U.S Army entered the scene of conflict in the Middle East on a limited scale in 1941 as a result of the urgent need of the British and Russian Armies for military supplies and equipment. Aid to the British in the Middle East began with the first deliveries of American planes to the Royal Air Force in the spring of that year, and the arrival of U.S. Army Signal Corps and Ordnance Department technicians during the summer to instruct the British in the use and maintenance of American equipment. Aid to Russia by way of the Persian Corridor began in November, but was held to a minimum pending the enlargement of port and rail facilities and the construction of roads in Iran. Military planes were ferried from the United States to the Middle East by way of Brazil and central Africa before the end of 1941. Transport planes following the same route carried both American civilian and military personnel.

The Beginnings of Medical Service in the Middle East

The U.S. Military North African Mission

The expanding needs of the British forces in the Middle East were met by the creation in September 1941 of the United States Military North African Mission, with Brig. Gen. Russell L. Maxwell as its chief. The mission surgeon, Maj. (later Col.) Crawford F. Sams, joined the group in October and prepared a medical plan based on information available in Washington before personnel of the mission went overseas. The group traveled by air across the Pacific, arriving in Cairo on 22 November. Major Sams was joined there on the 27th by his assistant surgeon, 1st Lt. (later Maj.) Dan Crozier.[1]

Projects to be carried out under control of the U.S. Military North African Mission included construction of port facilities and establishment of shops for the repair and maintenance of aircraft, tanks, locomotives, and signal equipment. Because the United States was not a belligerent, the work was to be done under lend-lease by civilian contractors, but the mission surgeon was responsible for the medical care of all civilians employed, as well as for the health of American military personnel in the area.[2]

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[1] Principal sources for this section are: (1) Hist, Med Sec, Africa-Middle East Theater, Sep 41-Sep 45; (2) Annual Rpt, Med Dept Activities, USAFIME, 1942; (3) Annual Rpt, Med Dept Activities, Eritrea Serv Comd, USAFIME, 1942; (4) Hist of AMET to 1 Jan 46, Summary Outline, MS, OCMH files; (5) Matloff and Snell, *Strategic Planning for Coalition Warfare, 1941-42*, pp. 250-55; (6) Edward R. Stettinius, Jr., *Lend-Lease: Weapon for Victory* (New York: Macmillan Company, 1944), pp. 89-98; (7) Ltr, Brig Gen Crawford F. Sams (Ret) to Col Coates, 12 Mar 59, commenting on preliminary draft of this chapter.

Within a few weeks, Major Sams had completed sanitary surveys of Egypt, Eritrea, Anglo-Egyptian Sudan, and Palestine, using local civilian, British, and captured Italian records as well as personal reconnaissance. The information so developed was used to locate bases for medical operations and to modify preliminary plans in terms of actual conditions. Port Sudan was eliminated as a hospital location, and plans to establish a 100-bed unit at Port Elizabeth, near Capetown on the long Cape of Good Hope route to India and the Far East, were indefinitely deferred. For the time being the British supplied hospitalization of all U.S. personnel, both civilian and military, although 2,150 U.S. beds were scheduled for the area. Medical supplies from the United States reached the area through three different channels: the various contractors were responsible for procuring supplies needed by civilians employed by them; medical supplies for American civilian and military personnel under military control were requisitioned by the mission surgeon; British forces in the area were supplied under the Lend-Lease Act. Entry of the United States into the war resulted in some interruption to deliveries until the future status of the various construction projects about to get under way could be determined, but no immediate change of medical plans was required.

In Egypt, a headquarters dispensary was set up in Cairo in mid-December 1941 with Lieutenant Crozier as attending physician. Another dispensary in Heliopolis, a Cairo suburb where repair and maintenance shops were under construction, was established in February 1942. Hospitalization for all U.S. personnel continued to be provided in British hospitals, while native workers were cared for in Egyptian hospitals.

In Eritrea, where a naval base at Massaua, an air depot at Gura, and an arsenal and signal installations at Asmara were the principal projects, medical service began early in February 1942 with the arrival of Capt. (later Maj.) Thomas C. Brandon. With a male nurse, an X-ray technician, and six hospital attendants—all civilians—Captain Brandon established dispensaries at Asmara and Gura in February and, the following month, at Massaua and at Ghinda, where a large housing project for Massaua personnel was under development. Until additional medical officers arrived late in April, Brandon made the rounds of all four stations himself, covering a circuit of about 120 miles of mountainous country. American personnel were hospitalized in British hospitals, while Italian hospitals cared for Italian and native workers under insurance carried by the contractors.

The War Department, meanwhile, had directed on 18 February that all proj-

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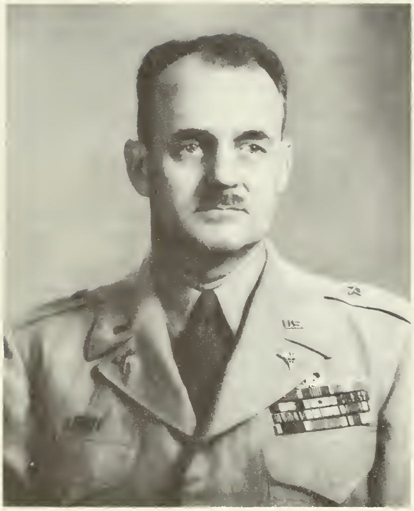
[2] Military personnel, although not yet engaged in actual combat, were not immune to combat wounds. The first U.S. battle casualty in the Middle East occurred less than a week after Major Sams's arrival. S. Sgt. Delmar E. Park, a Signal Corps observer and instructor with a British combat unit, was killed by German machine-gun fire near Sidi 'Omar, Libya, on 27 November 1941, ten days before the United States entered the war. The Signal Corps has erected a plaque to Sergeant Park's memory at Fort Monmouth, N.J. Annual Rpt, Med Dept Activities, USAFIME, 1942, with confirmation from a Signal Corps historian.



COLONEL SAMS

ects sponsored by the U.S. Military North African Mission be converted from civilian to military status within six months. Two months proved sufficient. The mission was completely militarized by 10 April. By special arrangement, some 2,500 civilian employees of the Douglas Aircraft Corporation were to continue operating the Gura depot for another six months, and about 2,000 employees of engineer contractors were to remain on civilian status, but all projects were brought under military control.

Following militarization, three area commands were organized to supervise construction work in the three main centers of activity. These were the Heliopolis Area; the Eritrea Area, with headquarters at Asmara; and the Palestine Area, with headquarters at Tel Aviv. Medical plans under the new organization called for military hospitals in these areas with an aggregate capacity of 2,450 beds. Since work had not yet been started in Palestine and medical personnel was at a premium, surgeons were named only for Eritrea and Heliopolis.

In Eritrea, Captain Brandon was succeeded as area surgeon on 1 May by Maj. (later Lt. Col.) William A. Hutchinson, who had arrived with two other medical officers a few days earlier. The area was organized at that time into four districts —Gura, Massaua, Asmara, and Ghinda— each with its own dispensary. The first U.S. hospital in Eritrea was a 250-bed unit established at Gura by the Douglas Aircraft Corporation on 17 June 1942. Although all personnel were civilians, the Army furnished the supplies and equipment, and the hospital functioned under control of the area surgeon. Its services were available to all Americans in Eritrea. In addition to this unit, plans called for a 500-bed station hospital at Asmara, 250 beds at Ghinda, and 100 beds at Massaua.

The Heliopolis Area medical section was set up by Crozier, now a captain, on 12 May. Captain Brandon succeeded Captain Crozier as Heliopolis Area surgeon on 22 May. Dispensary and outpatient service was provided for Americans and for native workmen, but hospitalization continued to be provided by the British, pending construction of a 900-bed station hospital planned for the Heliopolis depot. The Palestine area was to be served by a 450-bed station hospital in the vicinity of Camp Tel Litwinsky, near Tel Aviv, whenever it should be required.

In his capacity as Surgeon, U.S. Military North African Mission, Crawford F. Sams, by then lieutenant colonel, took part as American observer in the fourth and fifth Libyan campaigns, in March, May, and June 1942. Particularly concerned with the problem of forward evacuation from rapidly moving armored units, Colonel Sams was attached to the British 7th Armoured Division.[3]

The U.S. Military Iranian Mission

While the North African mission was operating in Egypt and Eritrea and was preparing to move into Palestine, another prewar mission, formed in October 1941 to help the British deliver supplies to Russia through the Persian Corridor, was laying the groundwork for extensive port and rail construction work in Iran and Iraq. The chief of the U.S. Military Iranian Mission, Brig. Gen. Raymond A. Wheeler, arrived in Basra, Iraq, with the first contingent of officers late in November. The mission surgeon, Lt. Col. (later Col.) Hall G. Van Vlack, did not reach the area until March 1942, after militarization had been ordered. Every effort was made to select medical personnel who had some familiarity with the area, and Colonel Van Vlack was no exception. He had directed missionary hospitals in the Persian Gulf area for several years before serving in World War I and knew well both the language and the people. The medical staff was soon augmented by the arrival of a dental officer, and by a few medical officers and enlisted men sent from the United States or transferred from the Russian mission, which dissolved in May.[4]

COLONEL VAN VLACK

The surgeon's office was located with the mission headquarters near Basra at the head of the Persian Gulf, but headquarters of the Iranian Engineer District was some 30 miles south at Umm Qasr, Iraq. The surgeon made the round trip across the desert each day to hold sick call at the mission headquarters, at the encampment of 600 men at Umm Qasr, and at a motor and equipment assembly plant at Rafidiyah. In addition to a headquarters dispensary at Basra, a small dispensary was maintained at Umm Qasr for emergency patients. The British 61st Combined General Hospital at Shu 'aybah, 10 miles southwest of Basra, was available to all U.S. personnel.

The first U.S. hospital in the Persian Gulf area was a 50-bed unnumbered station hospital (later designated the 256th Station Hospital), originally destined for Umm Qasr but diverted to Ahwaz, Iran, where it opened on 6 June 1942. Under command of Colonel Van Vlack, the hospital was staffed by U.S. Army medical officers, civilian male nurses from the construction companies, Polish refugee nurses, and a few first aid men borrowed from their regular construction jobs.

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[3] Ltr, Col Sams to TSG, 20 Jun 42, sub: Armored Forces Med Servs in the Western Desert.

[4] Principal sources for this section are: (1) Narrative Hist of Med Activities in the PGC; (2) Annual Rpt, Med Dept Activities, PGSC, 1942; (3) Hist, Med Sec, AMET, Sep 41–Sep 45; (4) T. H. Vail Motter, *The Persian Corridor and Aid to Russia,* UNITED STATES ARMY IN WORLD WAR II (Washington, 1952); (5) Ltr, Hall G. Van Vlack, to Col Coates, 23 Mar 59, commenting on preliminary draft of this chapter.

Air Routes to Africa and the Middle East

Late in June 1941 Pan American Airways, at the request of the United States Government, took over the task of ferrying lend-lease planes to British forces in the Middle East. The route followed ran from Florida across the Caribbean to Natal, Brazil, and thence over the narrowest point of the South Atlantic to Bathurst in the British colony of Gambia in West Africa. From Gambia the planes were flown to Khartoum in Anglo-Egyptian Sudan by way of Nigeria and French Equatorial Africa. A regular transport service over this route and on to Cairo was opened in mid-November at the request of the U.S. Military North African Mission.[5]

After Pearl Harbor, the AAF took over operation of the ferrying and transport services. Roberts Field, Liberia, became the west African terminus of the route, which was extended east to Karachi, India, over alternative courses. One route ran from Khartoum to Cairo, Palestine, and Basra; the other was by way of Eritrea and Aden. Before medical service along the route was established, aircrews and passengers were treated for malaria, dysentery, and other ills at the headquarters dispensary of the U.S. Military North African Mission in Cairo.

The Middle East as an Active Theater of Operations, 1942–43

Both the North African and the Iranian missions passed out of existence late in June 1942. They were replaced by the United States Army Forces in the Middle East (USAFIME), organized as a theater of operations under command of General Maxwell. Headquarters was in Cairo. Under USAFIME, the North African Service Command took over operations in Egypt and Palestine, while the Iran-Iraq Service Command supplanted the existing organization in the Persian Gulf area, now commanded by Col. Don G. Shingler, without change of functions. At the same time, a newly organized U.S. Army Middle East Air Force, commanded by Maj. Gen. Lewis H. Brereton, former commander of the Tenth Air Force in India, was brought under theater control.[6]

Coincident with activation of USAFIME, Generalfeldmarschall Erwin Rommel's *Afrika Korps* broke through British positions in Libya and drove to within 70 miles of Alexandria. Work was hastily suspended on all U.S. Army projects in Egypt and Palestine. Civilian construction workers and many military personnel were moved to relative safety in Eritrea. The North African Service Command shifted its headquarters to Gura early in July, and the theater head-

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[5] Craven and Cate, eds., *Plans and Early Operations*, pp. 320–27.

[6] The chief sources for this section are: (1) Hist, Med Sec, AMET; (2) Hist of AMET to 1 Jan 46, Summary Outline; (3) Motter, *Persian Corridor and Aid to Russia*, pp. 85–93; (4) Craven and Cate, eds., *Plans and Early Operations*, pp. 341–42.

Air Transport Command DC–3 Over Pyramids

quarters staff began burning its files in preparation for the evacuation of Egypt. By August, however, Rommel had been contained at El 'Alamein and work was resumed in the Cairo and Palestine Areas.

After the resumption of activities in Egypt, the theater was reorganized to simplify the command sturcture. The North African Service Command was abolished, and the three existing areas formerly under its jurisdiction became service commands responsible directly to the theater headquarters. The Heliopolis Area became the Delta Service Command, including all of Egypt. The Palestine Area, with boundaries enlarged to include the Levant States, Transjordan, and a wedge-shaped segment of western Arabia, became the Levant Service Command. Boundaries of the Eritrea Service Command were drawn to include Anglo-Egyptian Sudan, Eritrea, French Somaliland, Aden, and all of Arabia south of the Persian Gulf. The Iran-Iraq Service Command was renamed the Persian Gulf Service Command, with jurisdiction over Iran, Iraq, Kuwait, and that portion of

Arabia not included in other command areas. A short-lived and never important Army Ground Forces Command was also added to the theater organization in August to provide administrative supervision over U.S. tank crews operating with the British Eighth Army. Plans to move an American armored corps into the theater were dropped when invasion of Morocco and Algeria received priority, and the Army Ground Forces Command was eventually inactivated. That portion of Libya reconquered from the Axis forces was set up as the Libyan Service Command in December 1942.

Organization at the theater level was completed early in November with the creation of a Services of Supply headquarters, to which the service commands were thereafter responsible. General Maxwell became commanding general of the theater Services of Supply (SOS), being replaced briefly as USAFIME commander by Lt. Gen. Frank M. Andrews. In January 1943 Andrews was succeeded by General Brereton, who also retained his command of the Ninth U.S. Air Force into which the Middle East Air Force had been merged. As in the European theater at this time, the air mission was the primary combat function of USAFIME between May 1942 and September 1943.

Organization of the Medical Service

Theater Headquarters—The surgeon of the North African Mission, Crawford F. Sams—promoted to the rank of lieutenant colonel in February and colonel in August 1942—became USAFIME surgeon on the creation of the theater. In November he was also made Services of Supply surgeon, carrying out both assignments with a single staff. The dual assignment favored centralized control of the medical service, but the distance of some of the service commands from Cairo, and the lack of good rail and road communications put obstacles in the way. The surgeon was forced in large measures to rely on air travel as a means of co-ordinating the medical affairs of the widely dispersed commands.[7]

Contact with health department representatives of the various countries of the Middle East, and particularly with the Egyptian Ministry of Health, was an essential part of the medical section's activities. The theater surgeon was a member of a medical advisory committee of the Middle East Supply Council (and of its executive committee), which controlled the requisitions of medical supplies for the civilian populations of the countries within the theater. He kept in close touch with the medical authorities of the various Allied armies, especially with the Medical Directorate at General Headquarters, British Army Middle East Forces, and the Surgeon General, Egyptian Army.

The theater surgeon's office supervised the provision of medical services, the operation of the medical supply system, and the program for prevention of disease. The staff provided professional information to the theater commander; prepared medical records and reports, co-ordinating those sent in by the service commands; and inspected medical installations. It assigned personnel to the offices of service command surgeons and the Ninth Air Force and advised them on local medical problems. It also supervised the medical service supporting the Ninth Air Force in its movement across the Western Desert. As U.S. Army troops engaged in little fighting in the Middle East theater, many of the activities undertaken by the theater surgeon's office were those directed at prevention of disease. The provision of a supply of pure food and water and the establishment and maintenance of good facilities for disposal of waste were two important undertakings.

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[7] Principal sources for this section are: (1) Hist, Med Sec, AMET; (2) Annual Rpts, Med Dept Activities, USAFIME, 1942 and 1943; (3) Interv, W. K. Daum, Historian, with Col Eugene W. Billick; 11 Jul 52; (4) Intervs, Blanche B. Armfield, Historian, with Gen Sams, 18 Jan and 30 Jan 50.

The Service Commands—The service commands set up under the U.S. Army Forces in the Middle East remained relatively stable until near the end of 1943, when the mission of the theater underwent considerable change. The headquarters of each service command had a medical section in charge of a surgeon who was under the direction of Colonel Sams in his Services of Supply capacity.[8]

The administrative center of medical service in Delta Service Command was at the command's headquarters in Heliopolis, where a medical staff section operated an office patterned on the theater headquarters medical section. It also controlled an antimalaria unit and a general dispensary. A few miles from Heliopolis, at Camp Russell B. Huckstep, the site of a large quartermaster depot, was a small medical section consisting of a post surgeon, a veterinarian, and a dental officer. Three dispensaries operated by unit surgeons, a dental dispensary, and a medical subdepot were located there. When the surgeon's office of Delta Service Command moved from Heliopolis to Camp Huckstep in May 1943, it absorbed the post surgeon's office. The 38th General Hospital, which was to be the leading hospital of the theater, was established at Camp Huckstep in late 1942.

Delta Service Command served a number of other areas in some phase or other of its medical programs. The medical subdepot at Camp Huckstep frequently furnished medical supplies to the whole Middle East area. American air forces battle casualties occurring over Libya, Tunisia, Sicily, Italy, and southeastern Europe were cared for in the command's hospitals. Medical care for U.S. Army personnel stationed in the vicinity of the Suez Canal ports was provided by Delta Service Command, except for a brief period from March to October 1943 when an independent Suez Port Command was active. A port surgeon's office, a general dispensary, and the platoons of a field hospital served troops in the canal area.

A medical staff section of Eritrea Service Command was located at the command headquarters, which was established in August 1942 at Asmara, the capital city of Eritrea. A surgeon placed in each of four districts of the command maintained the health and sanitation of his particular area. Medical Department personnel stationed throughout the command were responsible for the health of Army personnel, American civilians, and

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[8] This section is based primarily on the following documents: (1) Hist, Med Sec, AMET; (2) Annual Rpt, Med Dept Activities, USAFIME, 1942; (3) Med Hist, Delta Serv Comd, 1942; (4) Annual Rpts, Med Dept Activities, Eritrea Serv Comd, 1942, 1943; (5) Annual Rpt, Med Dept Activities, Levant Serv Comd, 1942; (6) Narrative Hist, Med Activities, PGC; (7) Annual Rpt, Med Dept Activities, PGC, 1943; (8) Ltr, Gen Sams to Col Coates, 12 Mar 59; (9) Ltr, Van Vlack to Col Coates, 23 May 59; (10) Ltr, Lt Col James J. Adams to Col Coates, 7 Apr 59. Last three letters comment on preliminary draft of this chapter.

Italian laborers working for the U.S. Army. By the end of 1942 about 150 American military hospital beds were available to troops of the command; the civilian hospital of the Douglas Aircraft Corporation relieved the Army of the necessity of caring for civilians. With the decrease in construction of port and air base facilities in 1943, personnel strength in Eritrea was cut back to the minimum necessary for servicing bases and fuel dumps of the Air Transport Command, and for operating extensive radio installations. The need for medical service diminished proportionately.

In Levant Service Command, a medical staff section was set up in August 1942 at Tel Aviv, Palestine. The section included the surgeon of the command and a staff of veterinary, sanitary, and administrative officers, assisted by several enlisted men. Because of the lack of supplies and incomplete construction of American hospital facilities in 1942, British military hospitals in the area furnished most of the hospitalization of U.S. Army patients. For a time Levant Service Command was important as a base for the operation of American Air Forces units, but activities never developed to the extent originally anticipated, and by June 1943 the command was on the decline. The headquarters of the command moved from Tel Aviv to Camp Tel Litwinsky, some eight miles away, the site of a repair depot for engineer and ordnance equipment and of a steel container manufacturing plant. At this time the members of the medical section were relieved from duty with the exception of the veterinarian, and the commanding officer of the 24th Station Hospital (a unit that had arrived in February 1943) assumed the additional assignment as service command surgeon.

Libyan Service Command, established in early December 1942, did not have a medical staff section until March 1943. The surgeon's office was composed of a surgeon, a medical inspector, a veterinary officer, a Medical Administrative Corps officer, and a medical officer in charge of the headquarters general dispensary. This command functioned only until the end of active operations against the Axis in North Africa. In late May it was divided into Tripoli Base Command and Benghasi Base Command.[9] The new commands were disbanded in the fall of 1943, and their areas and installations were absorbed by Delta Service Command.

The medical section of the Persian Gulf Service Command (PGSC) was inherited with little change from the Iranian mission. Headquarters remained at Basra, Iraq, until January 1943, then moved to Tehran, Iran, pending completion of permanent headquarters at Camp Amirabad two miles from that city. A surgeon's office, responsible to Colonel Van Vlack, the command surgeon, was maintained in each of the three districts into which the gulf area was divided. The command surgeon's office instituted the medical policies for the whole command, but the emphasis was on the operating agencies—the hospital units. The headquarters medical section consisted only of the surgeon, a small staff, and a minimum of enlisted personnel to handle reports and records. The district headquarters also operated with minimum staffs. In April 1943 Colonel Van Vlack was succeeded as PGSC surgeon by Col. Forrest R. Ostrander, former commanding officer of the 38th General Hospital.

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[9] In the Middle East theater a base command was normally one step below a service command. Since Libyan Service Command no longer existed, Tripoli and Benghasi Base Commands dealt directly with their next highest echelon, SOS USAFIME.

Although it was administratively bound to the Middle East theater, the first major step toward autonomy came for the command in January 1943 when Cairo headquarters gave PGSC permission to requisition supplies directly upon the War Department, handle its own personnel procurement, assignments, and promotions; and deal with the British and Iranians without reference to theater headquarters. While the command still remained in the Middle East theater organization, this decisive action gave it a very independent status. Complete autonomy came with an order from Washington on 10 December 1943, which redesignated the command the Persian Gulf Command and made it directly responsible to the War Department through the Operations Division of the General Staff. With a simplified command relationship solidly established, the Persian Gulf Command was better able to carry on its mission of aid to the Soviet Union.

The Ninth Air Force—The Ninth Air Force, which at its peak had about 25,000 troops, was the major American combat force in the Middle East theater. It was organized in August 1942 by General Brereton, at which time the headquarters of U.S. Army Middle East Air Force was discontinued. During 1942 and 1943 the Ninth Air Force operated against enemy targets in Libya, Tunisia, Sicily, Italy, Greece, and Rumania. Under supervision of the theater surgeon, Col. Edward J. Kendricks, Jr., who had served as surgeon of the U.S. Army Middle East Air Force became General Brereton's Ninth Air Force surgeon. At the Cairo headquarters of the air force, Colonel Kendricks organized an office containing an assistant surgeon, a dental officer, a plans and training officer, a sanitation team, an adjutant, and some enlisted men. At first Colonel Kendricks doubled as Ninth Air Force Service Command surgeon, but a separate surgeon was later appointed to that element of the air force. The bomber and fighter commands had their own surgeons from the outset. Colonel Kendricks and his staff left the Middle East for England with the Ninth Air Force in October 1943.[10]

The Air Transport Command—In July 1942 a headquarters to administer Army activities in the vast reaches of central Africa was organized at Accra, Gold Coast, and named United States Army Forces in Central Africa (USAFICA). Its major mission was to maintain bases for the Air Transport Command. Although it never had a large number of troops, the command was originally organized like a theater. Under the theater headquarters was SOS USAFICA, an organization that furnished supplies and services needed for the operation of Air Transport Command units throughout Africa.[11]

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[10] (1) Hist, Med Sec, AMET. (2) Annual Rpts, Med Dept Activities, USAFIME, 1942, 1943. See also p. 80, below.

[11] Major sources for this section are: (1) Hist, Med Sec, AMET; (2) Annual Rpt, Office of Surg, USAFICA, 1942; (3) Hist of the ATC in Central Africa and the Middle East, pt. 2, Hist of the AMEW, ATC (30 Jun–14 Dec 43), vol. III, Hist of Supply and Servs, Files of Hist Br, MATS; (4) Annual Rpt, Med Sec, West African Serv Comd, USAFIME, 1943; (5) Annual Rpt, Sta Surg's Of-

As in other areas where transportation was the Army's primary mission, command of the theater was given to the AAF, in this case to the Commanding General, Africa–Middle East Wing, Air Transport Command, Brig. Gen. Shepler W. Fitzgerald. The Army retained control of the supply function through Col. James F. C. Hyde, commanding the SOS USAFICA, and for the time being of the medical function, which was in the hands of Lt. Col. (later Col.) Don. G. Hilldrup, simultaneously surgeon of the theater, the SOS headquarters, and the Africa–Middle East Wing of ATC. By December 1942, however, activities had grown to a point that made this triple duty no longer feasible. Following an inspection by Brig. Gen. (later Maj. Gen.) David N. W. Grant, the air surgeon, Lt. Col. (later Col.) James G. Moore was made surgeon, AMEW, relieving Hilldrup of all responsiblity for Air Transport Command medical service except for furnishing hospitalization and medical supplies, both included among his SOS functions. Colonel Hilldrup was relieved in mid-1943 by Col. Thomas E. Patton, Jr.

Later in the year the central African command was dissolved and its territory absorbed by the Middle East theater. In its place theater headquarters established the West African Service Command, with headquarters at Accra. The commanding officers of the 67th Station Hospital at Accra, Maj. George F. Piltz and, from early 1944, Maj. (later Lt. Col.) Leslie E. Knapp, served also as surgeons of the West African Service Command. At the end of 1943 the Africa–Middle East Wing of the Air Transport Command was split into Central African and North African wings, with Maj. (later Lt. Col.) James W. Brown and Lt. Col. (later Col.) Clarence A. Tinsman, the respective surgeons.

Another important base in the West African Service Command was the city of Dakar, in French West Africa.[12] Soon after control of the area passed to the Allies with the invasion of North Africa, a complete airport had been constructed that could handle up to 100 planes a day, and a camp for all permanent personnel had been built and fully equipped. It was later necessary to move the airport to a new site because the swampy mosquito-infested surroundings contributed to an excessively high malaria rate.

The command, known as U.S. Army Forces in Liberia, which established its headquarters in mid-1942, was to provide services along the ATC route through Liberia, defend the U.S. Army installations as well as the facilities of the Firestone Tire and Rubber Co. plantation, and carry out certain diplomatic commitments for training Liberian military forces and for the construction of roads. The presence of a force of about 2,000 men in Liberia in this early period had the added advantage of posing some threat to the pro-Vichy French around Dakar and in French Guinea and the Ivory Coast.

Medical activities in Liberia were administered at the station surgeon's office at Roberts Field, some thirty miles east

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fice, Roberts Field, Liberia, Hq, USAFIL, 1943; (6) Interv, Blanche B. Armfield with Lt Col Stephen D. Berardinelli; (7) Ltr, Col Berardinelli to Col Coates, 24 Mar 59, commenting on preliminary draft of this chapter.

[12] Dakar was actually within the boundaries of the North African theater, but the city and a small area around it came under control of U.S. Army Forces in Central Africa and later of the West African Service Command.

of Monrovia, where central control over medical matters was maintained and medical reports on the Liberian force were completed. The 25th Station Hospital (250 beds) near the field cared for the medical needs of the entire command. From June 1942 until April 1943, Lt. Col. (later Col.) Loren D. Moore served as station surgeon. Under the experienced direction of Lt. Col. (later Col.) Justin M. Andrews, Colonel Moore carried out extensive malaria survey and control work. When the entire Liberian Task Force, commanded by Brig. Gen. Percy L. Sadler, arrived in the spring of 1943, both Moore and Andrews were transferred to the new North African theater. Lt. Col. Stephen D. Berardinelli, commanding officer of the 25th Station Hospital, succeeded Moore as station surgeon. Medical department personnel in Liberia were responsible for the medical care of a large force of construction engineers during the period when the base was being built, and later gave support to all elements of the defense forces in Liberia. Air Transport Command personnel, some members of the Royal Air Force, and natives working for the Army also received medical care. In September 1943, the Liberian command was subordinated to the Middle East theater, but this action did not change its basic mission.

Hospitalization and Evacuation

The extreme heat of the Africa–Middle East area, originally thought to be one of the greatest problems in planning for hospitalization, proved to be less important than anticipated. Except in the Persian Gulf, the experience of the Medical Department demonstrated that adverse climatic factors were overrated as to their effect on the general health of troops. Excessive heat lasting for 24 hours of the day during the long summer season occurred in only a few locations, but the appalling list of diseases endemic in the population of the area caused great concern on the part of medical officers. Malaria, yellow fever, typhus, smallpox, dysentery, all forms of venereal diseases, and many other diseases represented a serious danger to troops working in close contact with the inhabitants of the region. In the face of centuries of ignorance, maintaining good sanitation was a major task.[13]

Medical officers tried to create "isolated foci of cleanliness" in and around the immediate areas of hospital plants and other U.S. Army installations. This method proved to be the only practical way to handle the sanitation problem, since troops were concentrated in places widely separated from each other, making a comprehensive program impossible. Hospitalization in the Middle East theater was almost entirely associated with the service commands, and rear-area-type hospitals predominated throughout the theater. No mobile hospitals operated in the Middle East, although platoons of the field hospitals supporting the Ninth Air Force during its operations over Libya and Tunisia moved about more frequently than most other hospitals.

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[13] General sources for hospitalization and evacuation in the theater as a whole are: (1) Hist, Med Sec, AMET; (2) Annual Rpts, USAFIME, 1942, 1943; (3) Hist of Preventive Medicine in the Middle East, 19 Oct 41–23 Jun 44, by Lt Col Thomas G. Ward; (4) Hist of AMET to 1 Jan 46, Summary Outline.

Delta Service Command—Delta Service Command occupied a central position in the theater. The most important U.S. Army medical installation in the theater, the 38th General Hospital (1,000 beds), arrived in the command in late October 1942 and moved into partially completed buildings in the desert near Heliopolis, adjacent to a large Quartermaster depot. It began admitting patients on 11 November, and by early 1943 was the focal point for fixed hospitalization in the Middle East. (*Map 4*) Until September 1943, when a general hospital was set up in the Persian Gulf Service Command, there was no other hospital with comparable resources in the theater. The chiefs of the medical, surgical, and neuropsychiatric services of the 38th also acted as consultants in their respective specialties to the theater surgeon.[14]

Beginning in the spring of 1943, platoons of the 16th Field Hospital were set up as small hospitals along the route of the Suez Canal, to give medical care to U.S. troops stationed there. *(See Map 4.)* Another hospital unit served the Ninth Air Force for a short time at an airfield near Alexandria. The command also established dispensaries in scattered places having only small garrisons. A medical supply depot operating as the medical section of the quartermaster depot at Heliopolis served as the main distribution point for medical supplies and equipment for all parts of the theater except the Persian Gulf area.

Medical Department facilities in Delta Service Command used permanent buildings, with the exception of the field hospital platoons, which were under canvas. The Egyptian climate on the whole did not hinder operations, but spells of extreme heat and dust storms caused some difficulties. An adequate supply of pure water was often lacking, except in large cities such as Cairo and Alexandria. To avoid using the contaminated and heavily silted water of the Nile, the command had sunk deep wells and extended pipelines. A water purification plant was installed at Camp Huckstep.

The general line of evacuation for the command, as well as for the whole theater, pointed toward the 38th General Hospital, whether a patient was an Ordnance Department soldier from the Suez Canal region sick with malaria, or an Air Force pilot wounded over Libya. Patients journeyed by ambulance from nearby places such as the Suez Canal, but if coming from Libya, Syria, Eritrea, or Iran, they traveled by air to Cairo and then by ambulance to the 38th General. Delta Service Command also served as the focal point for shipment of patients to the zone of interior by ship and plane, the latter method being employed most of the time.

Eritrea Service Command—Most of the U.S. Army medical installations in Eritrea Service Command were within Eritrea itself, although the boundaries of the command embraced the Anglo-Egyptian Sudan and the southern half of Arabia as well. In addition to the civilian hospital operated by the Douglas Aircraft Corporation at Gura, two hospitals were established in Eritrea. The 21st Station Hospital (500 beds), the first complete Army unit to arrive, debarked at Massaua on 13 November 1942. It was

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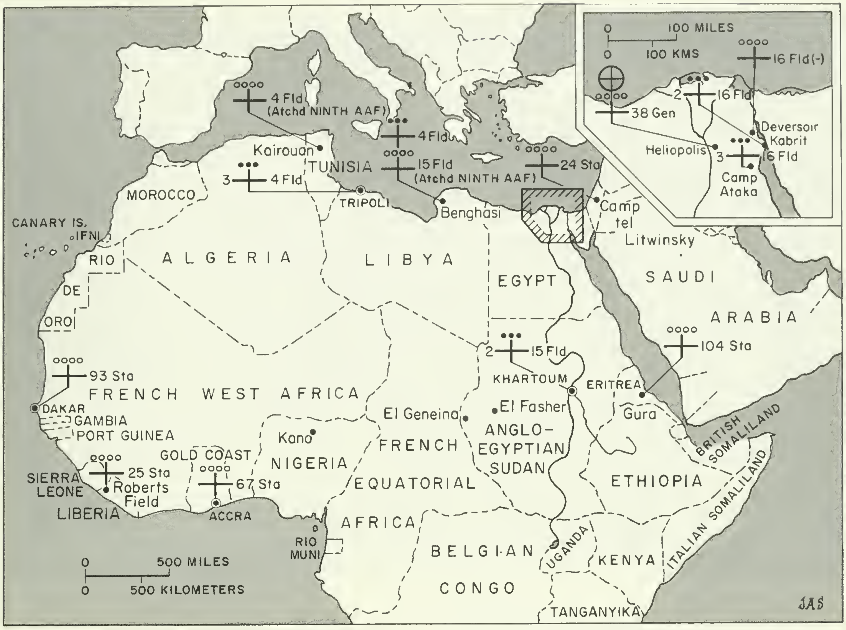
[14] (1) Annual Rpts, Med Dept Activities, Delta Serv Comd, 1942, 1943. (2) Annual Rpts, 38th Gen Hosp, 1942, 1943. (3) Annual Rpt, 16th Field Hosp, 1943. (4) Ltr, Gen Sams to Col Coates, 12 Mar 59, commenting on preliminary draft of this chapter.


0 100 MILES
0 100 KMS
16 Fld(-)
2 16 Fld
38 Gen
Deversoir
Kabrit
Heliopolis
3 16 Fld
Camp Ataka
4 Fld (Atchd NINTH AAF)
4 Fld
Kairouan
TUNISIA
15 Fld (Atchd NINTH AAF)
24 Sta
3 4 Fld
MOROCCO
TRIPOLI
Benghasi
Camp tel Litwinsky
CANARY IS.
IFNI
RIO DE ORO
ALGERIA
LIBYA
EGYPT
SAUDI ARABIA
104 Sta
2 15 Fld
KHARTOUM
ERITREA
93 Sta
FRENCH WEST AFRICA
DAKAR
GAMBIA
PORT GUINEA
El Geneina
El Fasher
Gura
Kano
ANGLO-EGYPTIAN SUDAN
GOLD COAST
NIGERIA
FRENCH EQUATORIAL AFRICA
BRITISH SOMALILAND
25 Sta
Roberts Field
67 Sta
SIERRA LEONE
LIBERIA
ACCRA
ETHIOPIA
ITALIAN SOMALILAND
RIO MUNI
BELGIAN CONGO
UGANDA
KENYA
TANGANYIKA
0 500 MILES
0 500 KILOMETERS
JAS

Map 4—U.S. Army Hospitals in USAFIME, 1 July 1943

sited the following day at Mai Habar, a town in the mountains between Asmara and Gura, and took over hospital buildings formerly occupied by the medical services of the Italian and British Armies. Some of the personnel of the 21st were detached to operate dispensaries at Asmara, Decamere, Ghinda, and Massaua. The second U.S. Army hospital to be established in Eritrea was the 104th Station Hospital, which arrived in late January 1943. It relieved the detachment of the 21st Station Hospital at Massaua, setting up a 100-bed unit there.[15]

By the spring of 1943 U.S. Army activities in Eritrea had diminished to the point where there was little need for a 500-bed hospital. Consequently, the 21st Station Hospital moved on to the Persian Gulf area in May 1943. During the previous month the 104th had turned over to the British Navy the hospital that the unit had been operating at Massaua and moved to the Gura air depot to share in the operation of the Douglas Aircraft hospital there. The depot finally closed in November, resulting in the disbanding of the Douglas hospital and the ship-

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[15] (1) Annual Rpts, Med Dept Activities, Eritrea Serv Comd, 1942, 1943. (2) Annual Rpt, 21st Sta Hosp, 1943. (3) Annual Rpt, 104th Sta Hosp, 1943. (4) Annual Rpt, 15th Field Hosp, 1943. (5) Annual Rpt, 16th Field Hosp, 1943.

KING GEORGE OF GREECE, COLONEL VAN VLACK, AND GENERAL ROYCE *at 38th General Hospital, Camp Huckstep, Egypt.*

ment of the 104th to Asmara (the location of the headquarters of Eritrea Service Command), where it established a 25-bed hospital. This small installation remained in operation for some time as the only U.S. Army hospital in Eritrea. A 50-bed hospital at Wadi Seidna, an important junction near Khartoum along the Air Transport Command's central African route, cared for the ATC personnel stationed there, as well as for the transients who passed through on their way to and from the Middle East and India. It was operated by a platoon of the 15th Field Hospital beginning in June 1943, and taken over by a platoon of the 16th Field Hospital in September. *(See Map 4.)*

Aside from the town of Massaua, which is one of the hottest and most humid seaports in the world, hospitals in Eritrea operated installations at places with fairly moderate climates due to elevations of 5,000 to 7,500 feet. The scarcity of potable water caused some trouble for these hospitals, and the task of maintaining good sanitary standards proved to be a constant battle, as in most other parts of the theater. The command was fortunate enough to secure permanent buildings for all its hospitals. It evacuated almost all of its patients by air.

Hospital Train Improvised From Passenger Cars, Benghasi Area

Levant Service Command—No U.S. hospital facilities were available in the Levant Service Command until February 1943, nearly eight months after the command was activated. General dispensaries at Tel Aviv and at Camp Tel Litwinsky, both in Palestine, served the area from July 1942. In mid-November the 4th Field Hospital arrived at the camp, took over operation of the dispensary there, and established a small infirmary. Lack of equipment prevented it from operating as a hospital, but many medical officers from its staff worked for short periods at two British general hospitals in Jerusalem. The 24th Station Hospital (250 beds) relieved the remaining elements of the 4th Field Hospital in February 1943. The latter then joined the parent unit, which had been assigned a few weeks earlier to the Ninth Air Force–Libya.[16]

The buildings of the 24th Station Hospital at Camp Tel Litwinsky were ideally situated on a small hill with a beautiful view of the countryside. The water supply was adequate and the drainage good. The equable Mediterranean climate and the fresh air and sunshine made the 24th a perfect place for convalescing patients, and it operated as such for men who had received treatment elsewhere in the theater. It also performed the usual functions of a station hospital for Levant Service Command personnel. Most patients arrived at the hospital by air, but some of those from Delta Serv-

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[16] (1) Annual Rpts, Med Dept Activities, Levant Serv Comd, 1942, 1943. (2) Annual Rpt, 4th Field Hosp, 1942. (3) Annual Rpt, 24th Sta Hosp, 1943.

PARTIALLY DUG-IN HOSPITAL TENTS *of the 3d Platoon, 4th Field Hospital, near Tripoli, May 1943.*

ice Command came in by rail. *(See Map 4.)*

Military activities in the command began declining by mid-1943. The command headquarters moved from Tel Aviv to Camp Tel Litwinsky, and the commanding officer of the 24th Station Hospital started serving as surgeon of the command in addition to his duties at the hospital. By October, the 24th Station Hospital closed, evacuated its patients to the 38th General Hospital in Egypt, and made ready to depart for the China–Burma–India Theater.

Libyan Service Command—By the time that the British Eighth Army had passed Benghasi in its advance through the Western Desert, a new service command was added to the original five. A short-lived command—formed on 7 December 1942 and disbanded on 26 May 1943—the Libyan Service Command included the area within the territorial boundaries of Libya not occupied by enemy forces. At first comprising only eastern Libya, the command grew in area as the Eighth Army advanced westward. The major American participants in the sixth Libyan campaign were members of the U.S. Ninth Army Air Force. Hospital care for the personnel of the force was provided first by British Army hospitals and later by hospitals of the Middle East theater.[17]

Beginning in January 1943 the platoons of the 4th Field Hospital, assigned to the Libyan Service Command, had the job of receiving Ninth Air Force patients from their squadron aid stations and evacuating them back to Egypt. The 4th Field also cared for Services of Supply troops stationed in the Libyan Service Command. The first unit of the 4th Field Hospital to begin work in Libya was the 1st Platoon, which arrived at Gambut on 26 January 1943 and began receiving patients three days later. It relieved pressure on the British hospitals in the area by taking American patients of the IX Bomber Command and Services of Supply personnel in the vicinity. It changed location on 28 February, moving forward to Benghasi where it established another hospital.

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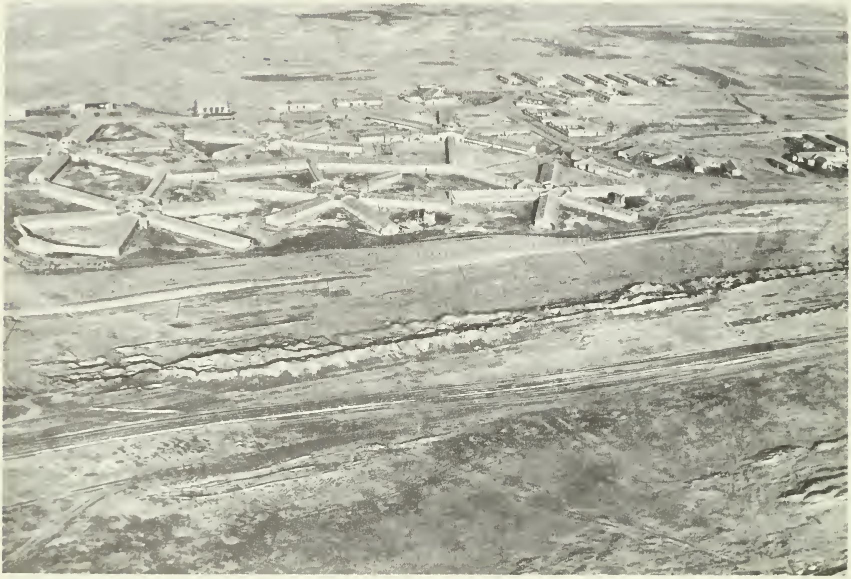
[17] (1) Annual Rpt, 4th Field Hosp, 1943. (2) Annual Rpt, 15th Field Hosp, 1943.

The 3d Platoon and the headquarters section of the 4th Field Hospital arrived in Tripoli on 26 March 1943 and set up a hospital for units of the Ninth Air Force and Services of Supply troops in western Libya and southeastern Tunisia. The 2d Platoon entered the field last, opening on 19 April at Sfax, Tunisia, where it supported two bombardment groups. Soon after the surrender of the Axis forces in Africa in mid-May, it moved back to Benghasi. Another field hospital, the 15th, arrived in Libya on 13 May and relieved the 1st Platoon of the 4th Field Hospital at Benghasi. (*See Map 4.*)

The most characteristic feature of field hospital operations in Libya was the independent functioning of the platoons, often separated by hundreds of miles. Except for buildings obtained by one of the platoons of the 4th Field Hospital, all hospital installations used tents. British tropical-type tents supplemented the regular ward tents with good results. The extreme heat of the desert was 15° to 20°F. less inside the British tent. During the period of active fighting, the platoons of the 4th Field Hospital habitually dispersed and dug their tents in for maximum protection from bomb fragments. Life in the desert under field conditions made it necessary to get along with what was on hand—nothing was wasted that could be turned into a useful item for the hospital. Water, though fairly adequate in quantity, had to be hauled for considerable distances.

Evacuation from southern Tunisia and Libya was generally by ambulance or plane from squadron aid stations of the Ninth Air Force and dispensaries of Services of Supply units to the platoons of the field hospitals, where planes picked up patients for delivery to the 38th General Hospital in Egypt. A curiosity of the situation was the parallel existence of an evacuation system under the control of the North African theater moving casualties from Tunisia westward to Algiers, so that two supply and evacuation routes ran at an angle of 180° to each other. A similar situation prevailed during the invasion of Sicily when the Ninth Air Force again supported the British Eighth Army. The Middle East theater ran its chain of evacuation from Sicily by way of Tripoli to Egypt, while the North African Theater evacuated from Sicily to Bizerte and thence westward.

Persian Gulf Service Command—In the Persian Gulf area the first substantial shipment of U.S. troops arrived at Khorramshahr, Iran, on 11 December 1942. With them came the personnel of 2 station hospitals, the first major increment of Medical Department troops



113TH GENERAL HOSPITAL AT AHWAZ, IRAN, *laid out in radial pattern with connecting wings.*

to arrive in the command. The 2 hospitals, the 19th and 30th Station Hospitals, both 250-bed units, began operating in early January 1943, the 19th at Khorramshahr and the 30th at Tehran. Later in January the temporary 50-bed hospital at Ahwaz was designated the 256th Station Hospital. Between January and the end of June, 3 more station hospitals (the 21st, 113th, and 154th) and 3 field hospitals (the 18th, 19th, and 26th) were established in Iran. No additional hospital units arrived there during the existence of the command.[18] (*Map 5*)

The 113th Station Hospital (750 beds), the largest American hospital in Iran, began acting as a general hospital for the command soon after it arrived at Ahwaz in May. It offered complete treatment for all diseases and injuries and served as a clearinghouse for patients being evacuated to the zone of interior through the 38th General Hospital in Egypt. It also provided station hospital care for nearby troops. In September the unit was reorganized as the 113th General Hospital and was given personnel to operate a 1,000-bed plant. Another

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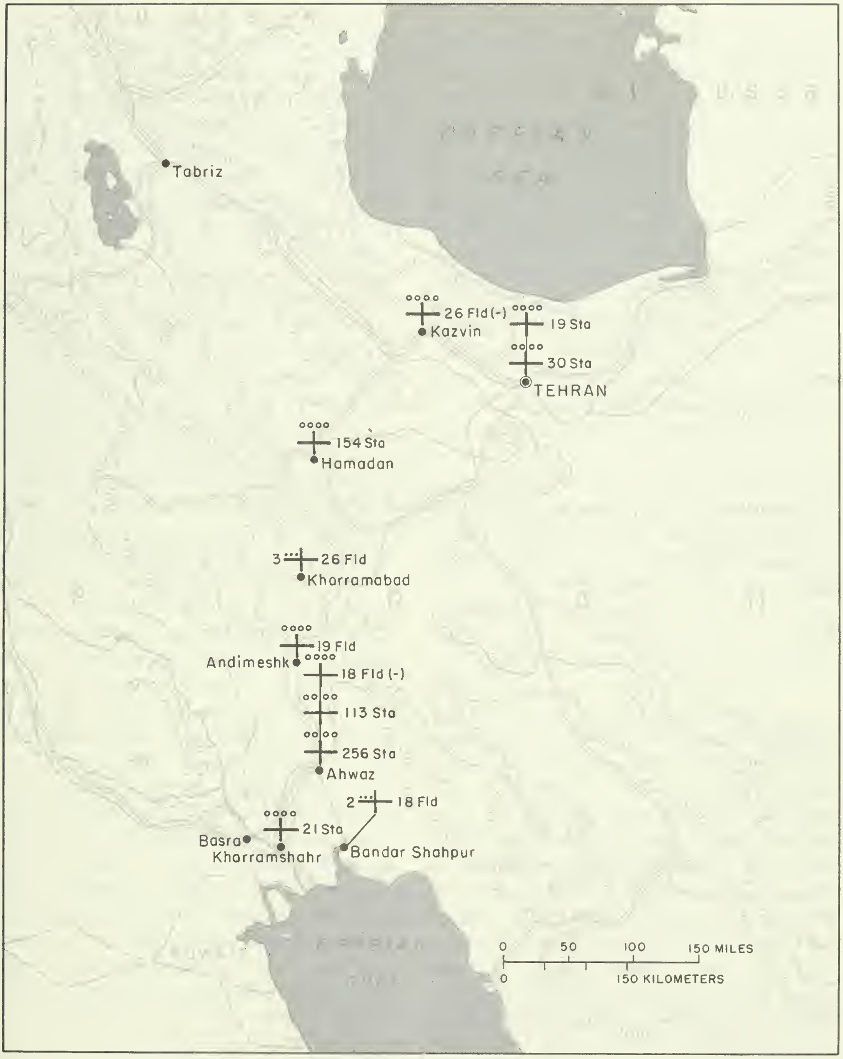
[18] (1) Hist, Med Activities, PGC. (2) Annual Rpts, Med Dept Activities, PGSC, 1942, 1943. (3) Annual Rpt, 113th Gen Hosp, 1943. (4) Annual Rpts, 19th, 21st, 30th, 154th, 256th Sta Hosps, 1943. (5) Annual Rpts, 18th, 19th, 26th Field Hosps, 1943.


Tabriz
26 Fld (-)
Kazvin
19 Sta
30 Sta
TEHRAN
154 Sta
Hamadan
3
26 Fld
Kharramabad
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Andimeshk
18 Fld (-)
113 Sta
256 Sta
Ahwaz
2
18 Fld
21 Sta
Basra
Kharramshahr
Bandar Shahpur
0
50
100
150 MILES
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150 KILOMETERS

MAP 5—U.S. Army Hospitals in the Persian Gulf Service Command, 1 July 1943 of the larger units in the command, the 21st Station Hospital (500 beds), began functioning at Khorramshahr in mid-May, replacing the 19th Station Hospital, which moved to Tehran. The 154th Station Hospital, a smaller unit of 150 beds, first established a tented hospital at Ahwaz in February, but moved north to its permanent station at Hamadan in June. The 50-bed 256th Station Hospital, displaced at Ahwaz by the 113th General, moved late in August to Abadan on the Shatt-al-Arab near the Persian Gulf.

With one exception—the 19th Field Hospital at Andimeshk—the field hospitals in Iran dispersed their platoons to scattered locations where each was able to run a hospital of at least 100 beds. Installations operated by field hospital platoons were, in effect, small station hospitals and were usually housed in permanent buildings. They shifted from place to place much more frequently than the command's station hospitals. During 1943 the 18th and 26th Field Hospitals used all their platoons separately most of the time, the 18th operating hospitals at Sultanabad, Ahwaz, and Bandar Shahpur, and the 26th functioning at Abadan, Kazvin, and Khorramabad.

By early December 1943 almost 2,700 beds, provided by one general, four station, and three field hospitals, were in operation in the Persian Gulf Command. Provisional dispensaries and aid stations had also been set up as they were needed at road camps, railway installations, and other work sites along the supply routes to the Soviet Union. These small units supplemented those maintained by the Ordnance Department and the Engineer, Quartermaster, and Signal Corps for their own personnel. Where the installation was large enough to justify it, a medical officer was placed in charge. Where the installation was no more than an aid station, it was generally in charge of a trained enlisted man, sharing with other such stations the supervision of one medical officer. In the southern part of the command, dispensaries operated heatstroke centers consisting of air-conditioned rooms with beds and special facilities for heat cases.

Few hospitals in the Persian Gulf area operated under conditions that approached those prevailing in the United States or even in some overseas theaters. All of the locations were deplorable as far as sanitation was concerned, and many were at the mercy of the sweltering heat for a good part of the year. Dust storms, combined with temperatures of 150° and 160° F. in the sun (one station reported a reading of 183°F.), made service in some parts of Iran an ordeal to bear. To make matters worse Iran was a land of pestilence, the population being a reservoir of malaria, typhus, venereal diseases, intestinal infections, smallpox, and a variety of other diseases. Scarcely a place could be found where the water supply was not heavily contaminated. Water had to be filtered and then either boiled or chlorinated before it was safe to drink. Because of the practice of fertilizing with human feces, most of the locally grown vegetables and thin-skinned fruits required thorough cooking or dipping in boiling water before they could be safely eaten. Flies, mosquitoes, and other insects provided another source of disease as well as a constant annoyance.

Housing for hospitals posed a serious problem. Tented hospitals functioned briefly, but eventually almost all hospital construction rose from the ground up, using native mud, brick, and stone. Window ramps and doors fashioned from cratings of automobiles and trucks sent to the USSR, and plastic for glass windowpanes put the finishing touches on many hospital buildings. Men of the hospital detachments made many of their own items of equipment such as tables, chairs, and desks. The buildings themselves were always one storied and frequently were built in a rosette pattern with central rotundas from which five wards radiated. In the southern part of Iran, hospitals had air conditioning units in some of their buildings, making the heat of summer more endurable for both patients and hospital personnel.

By the fall of 1943 the Persian Gulf Command had reached a strength of some 29,500, a figure that varied no more than 2,000 during the following year. Although the command had hospital beds available for 10 percent of the strength during most of 1943, at no time was it necessary to use the full bed capacity. The average of hospitalization varied from 4.5 to 6.5 percent of the total strength. From the time the command was formed until 1 October 1943, total admissions numbered 24,889. The average rates per 1,000 per annum for disease and injury admissions in 1943 were 1,172 and 155 respectively. During the first nine months of 1943 the three main communicable diseases treated in PGSC hospitals were common diarrhea, which accounted for 4,348 admissions with a rate of 293 per 1,000 per annum; common respiratory disease, with 2,511 admissions and a rate of 169; and venereal disease, accounting for 1,563 admissions with a rate of 104. Specific dysentery, amebic dysentery, and pappataci fever were three other important causes for admission to hospitals.

Evacuation within the command was by rail, motor, and air transport, the more serious cases being sent from the station and field hospitals to the 113th Station Hospital at Ahwaz. Patients needing prolonged treatment traveled to Cairo by air for care at the 38th General Hospital. Soon after the 113th officially became a general hospital in mid-September 1943, it cared for many more serious and complicated cases. Here a board of medical officers examined patients and their records, and if it decided that an individual could not be successfully treated in the Persian Gulf Service Command, he would be shipped directly to the zone of interior by the air transport route across Africa. Although patients from the Persian Gulf area would frequently stop at the 38th General Hospital while waiting for a plane, their status was strictly transient, and the 38th could not change the decision made by the 113th General Hospital in Iran.

Central and West Africa—Except for a few dispensary beds at places along the route of the Air Transport Command, there were no U.S. Army hospital facilities under the U.S. Army Forces in Central Africa until early December 1942, when the 67th Station Hospital (250 beds) arrived at Accra.[19]

The following month another medical unit, the 93d Station Hospital (150

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[19] The 23d Station Hospital had been set up in Léopoldville, Belgian Congo, in September 1942 to provide medical care for a southern branch route of the ATC, but it never got into full operation because the proposed route was abandoned by the end of the year. The idle 23d was finally sent to the North African theater in April 1943.

167th Station Hospital at Accra, Gold Coast

beds) debarked at Dakar, French West Africa. The major function of both hospitals was to give medical support to the bases of the Air Transport Command. Between Dakar and Accra a third hospital, the 25th Station (250 beds), had been operating since June 1942 near Roberts Field, Liberia, a major airfield of the Air Transport Command.[20]

The three major points of U.S. Army hospitalization remained at Accra, Dakar, and Roberts Field throughout the war. Since all three station hospitals were well within the tropics, their personnel were subject to high temperatures, malaria, venereal disease, and a host of tropical diseases. Malaria in particular took its toll in thousands of man-days lost. The hospital buildings built or acquired for these units followed a simple one-storied hospital plant layout. The dispensaries at the stations of the Air Transport Command sent patients needing hospital care by air to the hospital nearest their landing fields. During 1943 west African hospitals evacuated some 300 patients to the United States, most of them by air transport. Since all those evacuated were general-hospital cases, shipment west to the United States on the return air route was preferable to sending patients farther away from the zone of interior by going east across Africa to the nearest general hospital in Egypt.

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[20] (1) Annual Rpt, Med Dept Activities, USAFICA, 1942. (2) Annual Rpt, Med Dept Activities, West African Serv Comd, 1943. (3) Annual Rpts, Med Dept Activities, USAFIL, 1942, 1943. (4) Annual Rpt, Med Dept Activities, Central African Wing, ATC, 1943. (5) ETMD Rpt, USAFICA, Aug 1943. (6) Mae Mills Link and Hubert A. Coleman, *Medical Support of the Army Air Forces in World War II* (Washington, 1955), pp. 588–90.

Summary—From the beginning of the theater, the medical service in the Middle East was one that had served widely dispersed troop concentrations. The prevailing pattern of small station hospitals and field hospital platoons operating in the same capacity was the most logical approach to supplying medical service to one of the largest U.S. Army theaters in the world in terms of land area. In physical plant the hospitals of the Middle East theater compared favorably with many cantonment-type hospitals in the United States, considering the difficulties imposed by unfavorable climate, poor sanitary standards, and endemic diseases. All these factors caused extra work that would be largely unnecessary in some theaters. Hospital plants often took the additional precaution of enclosing their areas with barbed wire fences to prevent pilfering.

The theater reached its peak strength in July 1943, when it had 66,483 troops. Maximum hospital bed strength was reached at the same time, with 6,600 fixed beds scattered from Liberia to Tehran.[21] Approximately half of the total, or 3,200, were in the Persian Gulf Service Command. Delta Service Command had 1,000; Eriterea Service Command had 450, including those in the civilian hospital of the Douglas Aircraft Corporation; and U.S. Forces in Central Africa were served by 400 beds. There were 400 beds under jurisdiction of the short-lived Suez Port Command; 400 in the Libyan Base Command; 500 in the Tripoli Base Command; and 250 each in the Levant Service Command and in Liberia.

Although the ratio of fixed beds to troop strength was high—9.9 in the peak month—the general average of beds occupied at any one time rarely exceeded 5 percent of theater strength.

Admissions to fixed hospitals in the Middle East theater during the period of greatest activity—1 July 1942 through 30 September 1943—totaled 53,863, of which 24,889 were in the Persian Gulf Service Command. The five leading causes of admissions were intestinal disease, respiratory disease, injury (exclusive of battle casualties), cutaneous disease, and venereal disease. The 120-day evacuation policy originally planned for the medical service of the theater proved adequate. Evacuation within the theater emphasized the use of airplanes because of the wide dispersal and lack of other adequate facilities. No special ambulance planes operated for this purpose, but regular transport planes were used when available. During the period under consideration most evacuees to the zone of interior traveled by Air Transport Command plane from Cairo. By October 1943, approximately 1,000 patients had made the trip to the United States.

At no time were U.S. hospital ships available for evacuation from the Middle East. In the early period, a few patients were sent to the zone of interior from the Persian Gulf on cargo ships by way of the Cape of Good Hope. Space on British hospital ships in the eastern Mediterranean was sometimes available. The British hospital ships, however, generally excluded psychotics, and the ATC planes would carry patients of this class only when accompanied by a medical officer or nurse. As a result, some psychotics were held at the 38th General Hospital for more than a year. In other instances a medical officer who could not easily be spared was nevertheless detailed for this service.[22]

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[21] See app. A–2.

The Middle East as a Supply and Service Theater, 1944–45

The United States Army Forces in the Middle East reached a peak strength of more than 65,000 in midsummer of 1943, but combat activities in the area were rapidly coming to a close. Ground Forces headquarters was discontinued during the summer because no American ground combat troops remained in the Middle East. The Ninth Air Force supported the British Eighth Army in the invasion of Sicily early in July, and later that month participated in the bombing of Rome, but the successful raid on the Ploeşti oil fields of Rumania in August was the last combat mission for the Ninth Air Force in the Middle East. Transfer of personnel to the Twelfth Air Force in North Africa began in July, and headquarters moved to the United Kingdom in October.

After departure of the Ninth Air Force, operations in the Middle East were those characteristic of a large communications zone, consisting almost exclusively of maintaining supply lines and transporting supplies and personnel.

Organizational Changes

Theater Headquarters—With the departure of General Brereton in September 1943, Maj. Gen. Ralph Royce assumed command of the United States Army Forces in the Middle East. The separate services of supply headquarters was discontinued at this time, but without in any way affecting the work of the Medical Department in the theater. Colonel Sams, who had returned to the United States in August, was succeeded as theater surgeon by Col. Eugene W. Billick.

While activity declined in the eastern Mediterranean in the fall of 1943, activity in the Persian Gulf area was still increasing. The independent mission of the Persian Gulf Service Command was recognized early in December when its administrative tie with Cairo was cut and the command was made directly responsible to the War Department. In effect, the redesignated Persian Gulf Command remained an independent theater until 1 March 1945, when it was merged with USAFIME and the Mediterranean Base Section from the Mediterranean theater to form the Africa–Middle East Theater of Operations.

The staff of the theater surgeon's office in Cairo underwent numerous changes during 1944 and 1945. Many of the original officers on Colonel Billick's staff returned to the United States, their duties being carried on either by newly appointed officers (of lower rank than their predecessors), absorbed by other subsections of the office, or handled by officers assigned to Medical Department installations. The head of the dental section, for example, had a triple assignment, since he was also dental surgeon of a service command and of a general hospital. The preventive medicine section, the one element where expansion occurred, had a malariologist (stationed in

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[22] Ltr, Van Vlack to Col Coates, 23 Mar 59, commenting on preliminary draft of this chapter.

West Africa) assigned to it, as well as a nutrition officer.

A contingent of the Women's Army Corps, which arrived in the middle of 1944, replaced practically all the enlisted men in the theater surgeon's office. The turnover in commissioned personnel was heavy in 1945, and the loss acutely felt, especially since the theater had experienced a substantial expansion in territory. A new development during early 1945 was the appointment of medical, surgical, dental, and neuropsychiatric consultants. They worked not only as members of the theater surgeon's staff but also as chiefs of services in the 38th General Hospital. During the course of the year many sections of the surgeon's office were merged, and it was common to find medical staff officers combining two or more assignments.

The Service Commands—With the Persian Gulf Command autonomous by the beginning of 1944, the remaining service commands in Africa and the Middle East were regrouped into two major commands. The Middle East Service Command was established in February, merging the Delta, Levant, and Eritrea Service Commands. The Levant Service Command was disbanded, while Eritrea became a base command subordinate to the new headquarters. The West African Service Command remained substantially as it had been organized in the fall of 1943.[23]

The medical service in the Middle East Service Command was responsible for the care of all American troops and associated personnel in Egypt, the Anglo-Egyptian Sudan, Eritrea, Libya, Palestine, Syria, and Arabia. When formed, the commanding officer of the 38th General Hospital at Camp Huckstep, Egypt, assumed the additional job of service command surgeon. Various other officers of the command surgeon's office also had primary assignments with Medical Department units and installations. The surgeon's office was located at the 38th General Hospital. Eritrea Base Command was a subcommand of the Middle East Service Command during most of 1944, but was established as a separate command directly under theater headquarters in December. The commander of the 104th Station Hospital at Asmara served as the base command surgeon throughout the year. Activities in the West African Service Command centered around the command headquarters in Accra and the base command at Dakar. The medical service, primarily for the benefit of Air Transport Command personnel, continued to provide hospitalization, medical supplies, sanitary services, and malaria control. The command surgeon was also the commanding officer of the 67th Station Hospital at Accra. The Medical Department in Liberia experienced some difficulties in carrying on medical and administrative measures for controlling malaria and venereal disease because of reductions in medical personnel.

Coincident with the territorial expansion of 1 March 1945, French Morocco, Algeria, and Tunisia were organized into a new command, the North African Service Command, under the Africa–Middle

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[23] The main sources for this section include: (1) Hist, Med Sec, AMET; (2) Hist of AMET, Summary Outline; (3) Annual Rpt, Med Dept Activities, Middle East Serv Comd, 1944; (4) Annual Rpt, Med Dept Activities, West African Serv Comd, 1944; (5) Annual Rpt, Sta Surg, Roberts Field, Liberia, 1944; (6) Hist, Med Activities, Persian Gulf Comd; (7) Annual Rpt, Med Dept Activities, PGC, 1944.

East theater. The offices of the Mediterranean Base Section at Casablanca became the new command's headquarters, and the commanding officer of the 56th Station Hospital in that city received the additional assignment of North African Service Command surgeon. By the end of June 1945, all U.S. Army activities in the West African Service Command were placed under the control of the North African Service Command. Medical Department units in West Africa were thereafter administered by the Southern Town Command, a subcommand whose function it was to handle the liquidation of U.S. Army installations in that area. Southern Town Command, with headquarters at Accra, was one of four subdivisions under North African Service Command, the others being Eastern Town Command, Center Town Command, and Western Town Command, with headquarters at Tunis, Algiers, and Oran, respectively. After the Central African Wing of the Air Transport Command had been inactivated in July, installations along its route through the Southern Town Command and the Middle East Service Command were either closed or greatly reduced. The bulk of air traffic passed through the northern part of Africa for the remainder of the year.

The Persian Gulf Command reached the peak of deliveries of war materials to the USSR during 1944. The separation of the command from the Middle East theater in December 1943 had no effect upon the medical service other than the forwarding of reports, which no longer required routing through Cairo. The Medical Department of the command continued to provide the best possible care for troops and carried on its never-ending task of refining preventive measures to combat the numerous diseases of Iran. Col. John E. McDill became PGC surgeon in January 1944. In the summer of that year, when the command was near its greatest strength, Colonel McDill exercised staff supervision over more than 2,400 Medical Department officers and enlisted men.

By the end of 1944 the motor transport routes to the Soviet Union started closing down, narrowing the major supply activities to the more confined route of the railroad from Khorramshahr to Tehran. Progressive reductions in tonnage through the first half of 1945 completed the primary mission of the Persian Gulf Command by 1 June, after which it packed and shipped excess supplies, turned over surpluses to a liquidation commission, provided security detachments for remaining fixed installations until they could be disposed of, and continued to supply the Air Transport Command. These residual duties required fewer troops and many soon began moving out of the command. The Medical Department's responsibility was to reduce its own personnel and installations to conform with the command's program without impairing the efficiency of its services to the remaining troops.

Air Transport Command—During 1943 the Africa–Middle East Wing of the Air Transport Command had developed stations at many towns and cities in northern, central, and eastern Africa, and in countries of the Middle East, which lay along the ATC routes to Karachi, India. The northern arm of its system stretched across French West Africa, French Morocco, Algeria, Tunisia, and through the Middle East to India, the most important stations being within the North African theater. All the airfields of the central route lay within the boundaries of the Middle East theater, passing through the countries of west, central, and eastern Africa, across southern Arabia, and on to India. By the end of 1943 the Africa–Middle East Wing had been split in two—the North African Wing with headquarters at Marrakech, French Morocco, and the Central African Wing with headquarters at Accra, Gold Coast. Since the latter was most closely associated with the Middle East theater, it is discussed here in more detail than the northern route.[24]

The primary objective of the Central African Wing was the delivery of high-priority freight and of military and civilian personnel, mail, and military aircraft across Africa. It transferred its cargoes to the North African Wing at Dakar and Cairo and to the India-China Wing at Karachi. The Central African Wing surgeon's medical responsibilities were limited to preventive medicine measures and the maintenance of dispensaries at the stations, including stations at which theater service command hospitals were located. The territorial command within which the wing operated furnished medical supplies as well as hospitalization. Near the end of 1943 the Central African Wing was relieved of the major medical problem of malaria control, which was placed under the direction of the theater command. Nineteen officers and seventy-one enlisted men of the Medical Department served at the thirteen stations of the wing in December 1943. At some of the smaller stations a medical officer could be on duty only part of the time, but Medical Department enlisted men served at all the dispensaries. Some dispensaries had facilities to handle personnel with minor illnesses and injuries, but serious cases were evacuated by air to the nearest U.S. Army hospital.

Transportation of patients homeward from the Middle East along the route of the Central African Wing was handled by detachments of the 805th and 808th Medical Air Evacuation Transport Squadrons. Each air evacuation flight was composed of a medical officer, six nurses, and eight enlisted men. From March 1943 to August 1944, 2,500 patients traveled westward across mid-Africa, then on to Brazil and the United States. Beginning in September 1944, however, air evacuation activities were transferred to the North African Wing.

Preventive medical problems constituted the chief concern of medical men stationed at the bases of the Central African Wing. Many of its stations were in highly malarious areas and on the edge of jungles and bush country, both insect ridden. Despite the presence of a large variety of tropical and other diseases (yaws, yellow fever, filariasis, typhus, dysentery, bubonic plague, smallpox, and so forth), malaria caused more illness among wing personnel than any other disease. Aircraft accidents resulted in the death of more wing personnel than any other cause, and the medical care of pilots flying the Central African route was an important matter to the medical service. Flight surgeons required that pilots take a semiannual flight physical examination to determine the flyer's fitness for duty. All airports had emergency plans in readiness in the event of crashes, including specially equipped ambulances and other crash vehicles. Near the coast, air-sea rescue teams used motor launches and amphibious planes when an aircraft fell into the sea. Trained Medical Department enlisted men extricated patients from downed planes and gave first aid treatment to the crash victims.

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[24] (1) Hist, Med Sec, AMET. (2) Hist of AMET, Summary Outline. (3) Rpt of Med Dept Activities in the Africa–Middle East Wing, ATC, for 1943, Off of Surg, Sta #1. (4) Med Hist, Central African Div, ATC, 22 Sep 44, by Maj Ralph N. Green, Jr., Div Med Historian, Air Staff files. (5) Hist of Central African Wing, ATC, AAF, by Capt John W. Dienhart, Wing Historian, on file at Hist Br, MATS. (6) Hist of the Med Dept, ATC May 1944, Cpl Celia M. Servareid, editor, Off of Surg, Hq, ATC, Air Staff files.

As the much shorter trans-African route across North Africa developed, the importance of the more southern route under the Central African Wing diminished. However, the latter was still thought to be a military necessity since it provided a sure contact with India, and it continued in operation until July 1945. Its dispensaries were inactivated as the wing closed its stations during June and early July, and the dispensary equipment was shipped to the nearest hospital or medical supply depot. The medical service provided along the northerly route, under the North African Wing, now lay within the boundaries of the Middle East theater since the theater had absorbed all of northern Africa in March. The North African Wing operated dispensaries from Dakar and Casablanca in the west, across the coast of northern Africa to Egypt, and on through the Persian Gulf Command to India. During 1945 it was responsible for evacuating a large number of patients from the Mediterranean, India-Burma, and China theaters to the United States.

Hospitalization and Evacuation

The need for hospitalization in the Middle East declined with the changing mission of the theater. Toward the end of 1943 the 4th and 15th Field Hospitals were shifted to the Mediterranean theater. In January 1944 the 24th Station Hospital left Palestine for Jorhat, India; and the following month the 16th Field was transferred to the European theater. In other hospitals, bed strength was reduced as patient loads became minimal.[25]

In Eritrea the 104th Station Hospital continued to operate a 25-bed unit at Asmara through 1944. Late in 1943 personnel not needed by this hospital were detached to form the 367th Station Hospital, activated as a 50-bed unit in January 1944 and sent to Wadi Seidna, near Khartoum, Anglo-Egyptian Sudan, where it relieved a platoon of the 16th Field Hospital. In Egypt, the 38th General Hospital at Camp Huckstep was reduced from 1,000 to 750 beds early in 1944. In West Africa the 67th Station Hospital (250 beds) at Accra, the 93d Station (150 beds) at Dakar, and the 25th Station at Roberts Field, Liberia, remained in place throughout 1944. The 25th Station was reduced from 250 to 50 beds in January 1944, then increased to 75 beds in September.

The acquisition of Northwest Africa from the Mediterranean theater on 1 March 1945 brought three additional

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[25] (1) Hist, Med Sec, AMET. (2) Annual Rpt, Med Dept Activities, Middle East Serv Comd, 1944. (3) Annual Rpt, West African Serv Comd, 1944. (4) Hist, Med Activities, PGC. (5) Annual Rpt, Med Dept Activities, PGC, 1944. (6) Unit Rpts of hospitals mentioned in the text. (7) ETMD's for 1944, 1945.

Fork-Lifting a Patient *aboard a transport plane, Casablanca, May 1945.*

hospitals under jurisdiction of the Middle East theater, and offered an opportunity to relocate some of the hospitals already serving in the command. Those acquired were the 56th Station (250 beds) at Casablanca; the 57th Station (150 beds) at Tunis; and the 370th Station (25 beds) at Marrakech. At this time the 150-bed 93d Station was transferred from Dakar to Tripoli, being replaced at Dakar by the 50-bed 367th Station from the Khartoum area. The 25-bed 104th Station from Asmara replaced the 367th at Khartoum, leaving a medical composite platoon in charge of the hospital at Asmara.

The end of the war in Europe brought a further reduction of activity in the Middle East, but air traffic through the theater increased, both from the Far East by way of India and from Europe by way of North Africa. In order to provide medical care for thousands of transient patients en route from India and Burma to the zone of interior, the 38th General Hospital—a 500-bed unit since June 1945—was moved to Casablanca in August. The 56th Station, which had been more than two years at Casablanca, took over the Camp Huckstep site of the 38th General near Cairo. Also in August, the 53d Station Hospital was reactivated as a 50-bed unit and was established at Oran.[26]

The evacuation of patients to the zone of interior rose considerably during 1944, due primarily to the inauguration in August of an evacuation service through the Africa–Middle East theater for patients from the China–Burma–India theater. The Persian Gulf Command also sent many homeward-bound patients through the theater. While these transient cases were not formally admitted to a hospital, they put a strain upon the theater's small number of medical installations because in some instances they had to be held several days while awaiting a plane. Total evacuations to the United States including patients from the China–Burma–India theater, the Persian Gulf Command, and the Africa–Middle East theater itself, numbered well over 3,000 during 1944. This figure rose to more than 5,000 for 1945, the transient patients constituting most of the total. The evacuation policy changed from 120 days to 60 days in August 1945 in order to filter patients back to the United States more rapidly.

In the Persian Gulf Command a general reduction in bed strength, based on the experience of a year and a half of operation, began before the end of 1943, while activity in the area was still increasing. The 30th Station Hospital, with 250 beds, left the Persian Gulf area for the China–Burma–India theater in November 1943. In January 1944 the 150-bed 154th Station was transferred to the Mediterranean theater, and the following month the 113th General Hospital was reduced from 1,000 to 750 beds. The 18th Field Hospital left the command in July 1944, and the 26th Field in December.

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[26] See pp. 497–98, below.

By the beginning of 1944, practically all hospital construction in the Persian Gulf area had been completed. The need for air-conditioned wards was recognized early, especially for hospitals located in the gulf and desert areas, but only a limited number of cooling units were available during the first year of operation. Installation of additional equipment in hospitals was begun in March 1944 and completed by the first of July, resulting in many completely air-conditioned wards at five hospitals. Approximately 1,248 beds in hospitals located at Andimeshk, Ahwaz, Khorramshahr, Bandar Shahpur, and Abadan had the benefits of air conditioning readily available.

The year 1944 saw a progressive reduction of illness in the command. At no time during the year did disease rates approach the peak rates of 1943. After July 1944 all the curves followed a steady downward trend. This decline, in a country rife with diseases, was a direct result of the effectiveness of the Medical Department's preventive medicine program.

By the beginning of 1945 there were 1,850 T/O beds remaining in the Persian Gulf Command, or a ratio of 6.9 to troop strength. Hospitals still operating at this time were the 113th General (750 beds) at Ahwaz, the 21st Station (500 beds) at Khorramshahr, the 19th Station (250 beds) at Tehran, and the 256th Station (50 beds) at Arak. The 19th Field Hospital had 200 beds in operation at Andimeshk and 100 beds at Bandar Shahpur.

Early in February the 21st Station was transferred to Italy, being replaced at Khorramshahr by the 113th General. A platoon of the 19th Field took over the Ahwaz site. At the beginning of April the 113th General was further reduced to 500 beds and was closed for movement out of the theater later that month. The end of June 1945 found only the 19th and 256th Station Hospitals and one platoon of the 19th Field Hospital still active in the command, with an aggregate of 400 beds.

Patients were evacuated from the Persian Gulf Command to the zone of interior on a 180-day policy, moving through the 113th General Hospital. For the period January 1943–September 1945, 1,168 patients were returned to the zone of interior. All patients were transported by air to Cairo and from there by air or water to the United States. Up to September 1944 the Persian Gulf Command furnished attendants for patients being evacuated to Cairo, but after that date Air Transport Command planes had one flight nurse and one enlisted man as attendants. A flight surgeon examined all patients before departure from Iran. The four leading causes for evacuation were neuropsychiatric diseases, injuries, cardiovascular diseases, and respiratory diseases. Most of the evacuation within the command, that is from the station and field hospitals to the general hospital, was by a weekly railroad ambulance car, motor ambulance, or a combination of the two. The command used air evacuation for emergency cases occurring within its boundaries.

Medical Supplies and Equipment

When early in the war, American units arrived in the Middle East short of medical equipment, the British furnished the necessary supplies, sometimes from lend-lease stores. Occasionally difficulties developed in the use of British supplies since American medical officers did not always regard British standards as equal to those of the U.S. Army. During the latter part of 1942, supplies in larger quantities began arriving from the United States, having been shipped by automatic issue of medical maintenance units. The supply situation was one of general disorder in the early period, as it was in most new theaters. Thousands of unlabeled boxes had to be opened to discover what had been received. To make matters worse, many Medical Department hospital units arrived without any supplies and equipment, their assemblies having been shipped separately. Fortunately, acquisitions from the British, improvisations from materials on hand, and a small number of local purchases enabled hospitals to operate without waiting for all their equipment to arrive.[27]

The theater experienced some shortages during 1942 and the early part of 1943, but medical supply conditions improved after the middle of the year. The 4th Medical Depot Company, which had arrived on 1 November 1942, established three medical supply subdepots in the Middle East theater—at Camp Huckstep, Egypt; Decamere, Eritrea; and Tel Litwinsky, Palestine. By February 1943 the military situation in the theater had so changed that the subdepots in Eritrea and Palestine were closed. All medical supply depot work was then concentrated at Camp Huckstep, where the 4th Medical Depot Company became the medical section of the theater's quartermaster general depot. Automatic supply from the zone of interior was discontinued in October 1943, and thereafter the theater ordered medical supplies by quarterly requisitions on the United States.

The medical supply authorities in the Middle East theater found that the experience gained during the theater's most active period indicated that a better plan to equip medical troops would have been to establish an assembly depot well stocked with all types of medical supplies at or near the port of debarkation. Such a depot could have assembled equipment for each unit after notification of its embarkation from the United States had been received. In effect, the Middle East theater used this plan for all medical units arriving after February 1943, and the units so equipped were better able to perform their duties than those equipped with assemblies sent them from the zone of interior. The action taken within the theater helped medical units begin efficient operation sooner, since otherwise some units would have had to wait many months before certain essential items arrived. Furthermore, unit assemblies from theater supplies had fewer shortages because the element of loss through handling was reduced to the minimum. Only items actually required by the unit to perform its mission were issued, thereby saving both equipment and transportation from depot to station.

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[27] The chief sources for this section are: (1) Hist, Med Sec, AMET; (2) Annual Rpts, Med Dept Activities, USAFIME, 1942, 1943; (3) Hist of Med Activities, PGC; (4) Annual Rpts, Med Dept Activities, PGC, 1943, 1944, 1945; (5) ETMD, USAFIME, Jan 1944.

Medical supply presented no serious problems in the Persian Gulf Service Command. Although the flow of supplies was slow in 1942 and early 1943, this situation improved by the middle of 1943, and adequate quantities of supplies were on hand after this time. A great deal of breakage and spoiling of perishable items occurred because of improper packing, poor handling, and exposure to the terrific heat of the Persian Gulf climate. Stock levels that had been built up during 1943 were reduced by 50 percent in January 1944, and the final reserve (a 90-day level of supplies set aside for emergency use) was abolished. About this time the automatic shipment of selected medical supplies was discontinued. Supplies were thereafter requisitioned on the basis of Table of Organization and Equipment (TOE) authorization and consumption. The overstockage that resulted was corrected by declaring excesses, which were eventually shipped back to the United States. Vaccines, which had previously been shipped by water, arrived in the Persian Gulf Command by air beginning in 1944, thus eliminating considerable loss in spoilage of vaccine before it could be used. In 1945 all surplus supplies and equipment not in use by medical installations were reported to an Army-Navy Liquidation Commission for disposition.

Professional Services

Major Medical Problems

The relatively limited combat activity, the difficult climatic conditions, and the low health and sanitary standards of the native populations all combined to channel the activities of the Medical Department in the direction of preventive medicine. In Central and West Africa the most serious problem was malaria; in the Persian Gulf area, respiratory diseases were common. Gastrointestinal disorders, venereal disease, and neuropsychiatric problems swelled the noneffective rates throughout the theater. Disease patterns in the Middle East were observed by medical officers with the original North African and Iranian military missions and the problems that would be encountered were fully appreciated from the start.

Malaria—American medical officers in the Middle East had first hand experience with malaria and other insect-borne diseases months before the standard malaria control and survey units developed by the Surgeon General's Office were available for overseas duty. Based on this experience, an antimalaria unit consisting of one Sanitary Corps officer and five enlisted men was developed in the theater late in 1942. One such unit, supplemented by civilian laborers, worked in each service command.[28]

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[28] (1) Hist, Med Sec, AMET. (2) Rpt of Gambiae Control and Malaria Prevention at U.S. Army Bases in West Africa, by Maj Elliston Farrell, 1944. (3) Rpt of Malaria Control at U.S. Army Installations in West Africa, 1941–44, Hq, West African Serv Comd, USAFIME, to CG, USAFIME, attn Chief Surg. (4) Malaria: Its Prevalence, Control, and Prevention in the Africa–Middle East Area, by J. W. H. Rehn.

In March 1943 the standard, more specialized units developed by the Surgeon General's Office for the purpose of malaria control were requested after the theater was informed of their existence. The one survey unit and two control units asked for did not reach the theater, however, until September 1943 because of shipping delays. About that date malaria became the most important disease in terms of man-days lost in this theater where disease problems were now paramount and combat injuries nonexistent. This was the date when two highly malarious areas, those of the Central African and Liberian commands, were included in the theater's boundaries. In October the malaria rate at Dakar reached almost 2,000 per thousand men per year; in Accra it reached 580 and in Liberia over 800. Half of all hospital admissions in West Africa were caused by malaria. In Dakar 50 percent of the enlisted men of the 93d Station Hospital came down with the disease at the height of the 1943 malaria season.

Efforts to control malaria were concentrated in western Africa, particularly at Dakar, in Liberia, and at Accra, the three worst areas. At the end of 1943 a malaria survey unit was at work in each of the three locations. In addition, Liberia and Accra each had a malaria control unit, two control units were assigned to Dakar, and a fifth one was assigned to Delta Service Command. Early in 1944 all these units were placed under more centralized control at theater headquarters, largely as a result of a visit to the theater by a group of officers from the Surgeon General's Office and the Medical Inspector, USAFIME. This malaria control commission made its investigation in West Africa in November and December 1943.[29] It was primarily concerned with ridding the West African coastal airports of *anopheles gambiae* mosquitoes in order to prevent the introduction of this malaria vector by plane into Brazil.[30] A secondary purpose was to check on the accuracy of reports of excessively high malaria rates among Eighth Air Force combat crews who passed through Air Transport Command installations in Africa on the way to England. A third matter for investigation was the appalling malaria rates among U.S. military personnel stationed on the West African coast. These were among the highest in the entire Army, not excepting the rates for combat troops in New Guinea, Guadalcanal, and Sicily. The fact that the troops were living in relatively permanent installations made the theater medical inspector, Lt. Col. Thomas G. Ward, term the situation "a disgrace to the U.S. Army."

The causes were pointed out by Colonel Ward in a report to the Chief Surgeon, USAFIME. The Central African command had failed to organize and maintain malaria control even after high rates had developed. The Africa–Middle East Wing, ATC, had similarly failed to provide a sound malaria control organization and policy after it had agreed with the Central African command to take over malaria prevention measures at the West African airfields. Shortages of personnel and equipment had prevented the wing from carrying out effective control measures. The Corps of

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[29] Members of the commission were Col. William A. Hardenbergh, SnC, SGO, Washington, D.C.; Col. Paul F. Russell, Malariologist, NATOUSA; Lt. Col. Karl R. Lundeberg, MC, SGO, Washington, D.C.; and Maj. Elliston Farrell, MC, Office of the Air Surgeon, Washington, D.C.

[30] See pp. 53–54, above.

Engineers and those charged with the maintenance of post utilities were in part responsible because of their failure to make the buildings mosquitoproof where the permanent personnel lived and where combat aircrews and passengers stayed while in transit. Finally, the medical and line officers at the West African posts had not developed an effective educational program to acquaint permanent and transient personnel with the dangers of malaria.[31]

The commission concluded in its report to The Surgeon General that malaria control in the theater was the responsibility of the theater commander and that personnel engaged in it should be part of the theater organization. The commission pointed out that, with available air transportation, one malariologist could maintain close supervision over malaria control work in the widely separated malarious areas around Dakar, Roberts Field, and Accra.[32]

The special malaria control organization that developed was headed by Maj. Elliston Farrell, the Army Air Forces representative on the visiting commission. He was assigned in February 1944 to the Medical Section, USAFIME, as theater malariologist, succeeding Lt. Col. Daniel Wright who had held that post since early 1942. Major Farrell was stationed in Accra, where he could direct operations on the coast of West Africa. He also acted as disinsectization officer for the South Atlantic, North African, and Central African Wings of the Air Transport Command and as liaison officer with the Brazilian Port Health Service. Two doctors of the Brazilian Department of Public Health were stationed at Dakar and Accra as liaison officers with the U.S. Army authorities. They were permitted to visit other Army airports in Africa that routed planes to Brazil, all in the interest of keeping Brazil free of *gambiae*.[33]

Working with the theater malariologist at the Accra, Liberia, and Dakar bases were assistant malariologists, entomologists, engineers, and the enlisted personnel of the control and survey units. Malaria control measures were usually restricted to a perimeter or protected area around a U.S. military installation. In some areas the U.S. Army and the British and French carried out successful co-operative schemes. The interallied scheme for malaria control developed by the British and American forces stationed in and around Accra was one of the larger efforts along these lines. It achieved integration of British and American direction, engineering, survey, and control activities.

Although the theater malariologist was responsible for co-ordinating and supervising malaria control activities in West Africa, he had no power of command. Consequently he found it difficult to deal with station commanders. Major Farrell revealed some of the trouble he had in Accra when he stated:

> Directives were not followed and as example the station commander was interested in building an officers' club and we

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[31] Memo, Col Ward, Med Insp, USAFIME, to Chief Surgeon, USAFIME, 21 Dec 43, sub: Malaria in West Africa.

[32] Memo, Col Hardenbergh, Col Lundeberg, and Maj Farrell for The Surgeon General, 4 Dec 43, sub: Mosquito and Malaria Control at West African Airfields.

[33] Elliston Farrell, "The Anopheles Gambiae Problem in Brazil and West Africa, 1941–44," *Bulletin, U.S. Army Medical Department*, vol. VIII, (February 1948), pp. 110–24.

> were interested in having screened buildings in the camp. . . . The officers' club was opened for general use the 5th of October [1944]. It was started the 29th of May and was built by men working 12 hours a day, 7 days a week, during the height of our [malaria] season. It was built at a time when lumber was not available for essential screening work. When the officers' club was finished the screening was done and by that time it was September and we didn't need it. . . .
>
> We are educating the soldiers in the malaria program, but we are not sufficiently educating the Generals and Colonels. I am actually convinced, from the reaction of the station commander, that he had no idea that malaria could be eliminated from the base. I had breakfast with him a few days before he was reassigned and he asked me how many cases of malaria we had last week. I told him two and that in the same time in 1943 there were forty or fifty. He was so obviously astonished that I realized for the first time that he had thought we were just pestering him. He had thought that when he had put in a good system of malaria discipline, nothing further could be done about it. He didn't know that by attacking malaria at its source it could be eliminated.[34]

Major Farrell also believed that the efficacy of the malaria program could have been greatly increased if there had been a single battalion attached to theater headquarters under the direction of the theater malariologist in lieu of a larger number of scattered malaria units. In his opinion a theater battalion for malaria control would have provided a much better system of centralized control over the movement of units. Such a battalion could have had a commander responsible for the flow of orders. Major Farrell found it a disadvantage to be 3,000 miles from the theater headquarters in Cairo and thus out of touch with the top command. It would have been better, he thought, if he had had someone else to do the supervisory work on the West African coast and had himself remained in Cairo nearer the source of authority. He concluded that the effectiveness of a malaria control program "depends on the success with which you attain the support of the highest authority in the theater. The only way to reach lower commanders is to get action from above."[35]

The 1944 malaria control program in West Africa followed traditional lines (insecticiding, larviciding, and malaria discipline) except for the use of DDT, which was introduced during the spring and summer months. By the close of 1944 the rates for Army personnel at Accra and Dakar were reduced to the lowest ever known at those stations. Although they dropped in Liberia too, a reasonably low rate was not attained at Roberts Field until late the following year. By 1945 malaria incidence throughout the entire theater had decreased greatly, the highest theater-wide rate being only about 15 per 1,000 per annum in January. The majority of cases continued to occur in Liberia.

The program went on to the close of the war, the malaria control organization assisting, as in other theaters, with the control of various insect-borne diseases besides malaria—bubonic plague, sleeping sickness, filariasis, and yellow fever. By the end of the war it had become evident that the small number of U.S. Army installations remaining in the theater would no longer require a malaria control organization of the size that had developed. After the surrender of Japan, most of the survey and control units were scheduled for inactivation with the exception of a survey unit located in Casablanca at the headquarters of the North African Service Command and a control unit at Roberts Field.

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[34] Interv, Oprs Serv, SGO, with Maj Farrell, 1 Dec 44, Rpt of Med Dept Activities in Accra, Gold Coast, West Africa. See also, Ltr, Van Vlack, to Col Coates, 23 Mar 59, commenting on preliminary draft of this chapter.

[35] Farrell Interv.

Venereal Diseases—The control of venereal disease was one of the most important medical problems in the Middle East theater. No reliable statistics existed as to the local incidence of venereal diseases, but Medical Department officers knew that the populations of all of the Middle Eastern countries were heavily infected. It was believed that in some areas almost 100 percent of the women with whom American soldiers came in contact had one or more venereal diseases. The Medical Department warned U.S. personnel of the danger through lectures, demonstrations, motion pictures, and other educational devices. It established prophylactic stations, used special investigation teams, and co-operated with civil public health authorities in finding the sources of infection.[36]

From an average of about 40 per 1,000 per annum for the period July–December 1942, the rate increased in 1943, exceeding 80 per 1,000 per annum in September, October, and November. Many factors other than the heavily infected population contributed to the high rate in the Middle East theater, among them being a general moral laxness common among men in overseas stations, and carelessness, forgetfulness, and refusal to accept advice. The Army was further handicapped because it was unable to command the aid of governments that were independent or were under the jurisdiction of another power.

In Delta Service Command, troops during the first part of 1942 were allowed to patronize houses of prostitution regulated by the Egyptian Government. The careless supervision of the houses and the cursory periodic medical examination given the inmates could hardly be classed as a controlled system according to officers of the U.S. Army Medical Department. The Egyptian Government next eliminated the houses of prostitution by law, but this action actually worsened the situation since "undercover houses," streetwalkers, and "taxicab prostitutes" increased in number. Venereal disease control activities were for the most part confined to U.S. Army troops, the commanders of units enforcing such measures as were practicable. Through an improved system of prophylactic treatment the venereal disease rate dropped from an average of 44.2 per 1,000 per year for the period January–July 1943 to a low of 33.75 in December.

Control of venereal disease was one of the most vexing problems facing the Medical Department in the Persian Gulf Service Command. During 1943 rates averaged 105 per 1,000 per annum, with a peak of more than 120 in September.

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[36] General sources for this section are: (1) Annual Rpts, Med Dept Activities, USAFIME, 1942, 1943; (2) Annual Rpt, Med Dept Activities, Levant Serv Comd, 1942; (3) Hist of Med Activities, Persian Gulf Comd; (4) Annual Rpts, Med Dept Activities, PGC, 1943, 1944, 1945; (5) Annual Rpts, Med Dept Activities, Eritrea Serv Comd, 1942, 1943, 1944; (6) Annual Rpts, Med Dept Activities, West African Serv Comd, 1943, 1944; (7) Annual Rpt, Med Dept Activities, Task Force 5889 (Liberia), 1942; (8) Annual Rpts, Med Dept Activities, USAFIL, 1943, 1944, 1945; (9) Annual Rpts of Venereal Disease Control Activities, USAFIL, 1942–45; (10) Med Stat Div, SGO, Morbidity and Mortality in the United States Army, 1940–45.

Control was very difficult since a system of publicly countenanced prostitution prevailed throughout Iran. Medical Department officers believed that over 95 percent of Iranian prostitutes were infected. Rates during 1944 showed some improvement, chiefly because of more satisfactory housing, better recreational facilities, and increased activities in delivery of supplies to the USSR. With the slackening of activities in the fall of 1944, rates again assumed an upward movement. The venereal disease control program was intensified, and in addition to providing convenient prophylactic stations and supplying ample stocks of mechanical and chemical prophylactic devices, it employed educational measures on a large scale. Venereal disease films were shown regularly in conjunction with talks by medical officers.

In one district in late 1944 three badly infected prostitutes agreed to participate in a demonstration for which they received medical treatment in return. Their lesions were shown to the troops in that area in combination with the usual talk on venereal disease. Controversial though it was, the idea of using diseased prostitutes for demonstrations spread to other parts of the command, but no appreciable lowering of the rates resulted.[37] In spite of energetic efforts to reduce the incidence of these diseases, rates continued undesirably high. No significant lowering of the rate occurred until the summer of 1945.

In the Levant, Eritrea, and West African Service Commands, the venereal disease problem was not as serious, but when the U.S. forces in Liberia came under the jurisdiction of the theater in September 1943, a command having an extremely high incidence of venereal disease added its excessive rates to the theater totals. The situation in Liberia was bad from the start. The venereal disease rate among personnel stationed there averaged 650 per 1,000 per year for the period August–November 1942. A plan to control venereal disease among troops and the native population was formulated in September 1942 by the U.S. Army with the Liberian health authorities. It resulted in the establishment of areas known as "tolerated women's villages" conveniently located near the barracks of the troops, but just outside the military reservation of Roberts Field. A health center for treatment of women in the villages was also established. Once begun, the command venereal disease officer and his assistant carried out the control program.

By December 1942, with the controlled native women's villages in full operation, the rate for Army personnel in Liberia had decreased to 470 per 1,000 per annum for the last month of the year. During 1943 control measures were intensified by giving more frequent instructions to all enlisted men, issuing prophylactic packets and giving sulfathiazole tablets to men going on pass, establishing more prophylactic stations, and making chemical prophylaxis compulsory for all men visiting the tolerated women's villages. The incidence of venereal disease decreased to an average rate of 180 per 1,000 per annum for the last seven months of 1943.

Venereal disease rates continued to decrease during the early part of 1944, a low of 63.2 per 1,000 per annum being recorded for February 1944, but later in the year a rise developed which reached

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[37] Ltr, Abram J. Abeloff to Col Coates, 16 Mar 59, commenting on preliminary draft of this chapter.

658.8 during November. One of the main reasons for the increase was that troops had started making contact with women in ten "off limits" villages near the military area. The refusal to accept advice and the failure to use available mechanical and chemical prophylaxis also contributed to the increase. The command thereupon undertook a more comprehensive control program that included treatment for women outside the tolerated villages. This extended coverage helped reduce the rate temporarily, but during 1945 venereal disease became so serious that it displaced malaria as the outstanding medical problem in Liberia. The elimination of the tolerated women's villages in June, low morale, general indifference, and constant turnover in personnel all contributed to a marked rise in the venereal disease rate. In 1945, monthly rates ranged from about 400 to almost 1,200 per 1,000 per annum.

As in other theaters, the use of sulfa drugs, and, from early 1944, of penicillin, greatly reduced the number of man-days lost because of venereal disease.

Typhus—Medical officers in the Middle East regarded typhus fever as one of the major problems of preventive medicine in the theater. During 1943 in Egypt alone over 25,000 cases occurred in the civilian population. Protective measures such as frequent inspections of immunization records to be certain that all personnel received a booster inoculation every three months, provision of bathing and delousing facilities, and the placing of native sections out of bounds contributed to the small number of cases that occurred among members of the U.S. Army and American civilians. Only 22 cases were found during 1943, none of them proving fatal.[38]

In recognition of the threat of typhus in many areas of the world, the USA Typhus Commission was created in Washington in December 1942, and its work was an important phase of the medical program in the Middle East theater in 1943 and 1944. A forward echelon of the commission arrived in Cairo in January 1943 and established the field headquarters of the commission. The field staff was made up of U.S. Army, Navy, Public Health Service, and Rockefeller Foundation personnel, all under the administrative control of the Middle East theater headquarters but not a part of the theater organization. Experts of the commission worked in various theaters, but the Cairo group was the most active, as typhus posed a greater threat in the Middle East and the adjacent North African theater than elsewhere.

The Typhus Commission group worked closely with the theater surgeon and also with medical officers of the British Army Middle East Forces and with officials in the Egyptian Ministry of Public Health. The commission had the use of a laboratory at a government serum and vaccine institute and a clinical ward in a local fever hospital, and soon began testing vaccine and louse powders in field experiments. During the first months of 1943 members of the commission made surveys of the typhus situation in many areas of the Middle East and North Africa, visiting Syria, Lebanon, Palestine, Iran, Iraq, Libya, Algeria, Morocco, and Tunisia.

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[38] (1) Hist, Med Sec, AMET. (2) Stanhope Bayne-Jones, "The United States of America Typhus Commission," Bulletin, *U.S. Army Medical Department* (July 1943), pp. 4–15. (3) Folder Typhus Mission, 1943–46, in Maj Gen LeRoy Lutes's personal files. (4) Interv, Blanche B. Armfield with Gen Sams, 30 Jan 50. (5) Condensed Rpts of the U.S.A. Typhus Commission.

The field director of the commission during most of its existence was Brig. Gen. Leon A. Fox.[39] The Cairo field headquarter was well situated so as to move easily to Europe, other African and Middle East locations, and the Far East. General Fox traveled during the late summer and fall of 1943 to North Africa, India, Burma, China, Iran, Iraq, and Turkey, making typhus surveys. His reports on the typhus situation in these areas were forwarded to the commission headquarters in Washington, and copies given to the Middle East theater surgeon and to U.S. Army surgeons of the North African and China–Burma–India theaters.

Activities of the Typhus Commission benefiting the population in Middle East countries consisted of the distribution of about 3,000,000 individual doses of typhus vaccine, repeated typhus surveys, and extensive dusting of populations with louse powders. The commission also handled a large-scale program to instruct personnel of the United Nations Relief and Rehabilitation Administration in modern and effective delousing methods. UNRRA was planning relief work in the Balkans, an area with a well-known history of typhus epidemics.

The commission maintained contact with French scientists at several of the Pasteur Institutes in North Africa and the Middle East. It also kept in touch with the Egyptian Ministry of Public Health, and co-operated with it in various projects. The surgeons general of the Egyptian and Iranian Armies agreed to a vaccination program administered by the Typhus Commission. The allocation of typhus vaccine to the various Middle East countries was handled by the Allied organization that governed the flow of lend-lease supplies, the Middle East Supply Council. As both the theater surgeon and the field director of the Typhus Commission were members of the council they were able to control the allocation, a point vital to the success of the program, as otherwise typhus vaccine could easily have become a monopoly of the privileged or have found its way into the black market.

The Typhus Commission participated in control activities at Naples during the outbreak of typhus in that city during the winter of 1943–44. The work of the commission was continued throughout the Middle East and Africa during 1944, and in 1945 it put into effect a typhus control program in the Balkans. The possibility of dissolving the commission's field headquarters at Cairo was brought up during the summer of 1944, but this did not take place until midsummer of 1945, when it was closed and its facilities and equipment transferred to a U.S. Navy epidemiology unit.

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[39] The first director of the Typhus Commission was Rear Adm. Charles S. Stephenson, MC, USN. On a survey trip to Lebanon and Palestine during January 1943, Admiral Stephenson became ill and later returned to the United States. In February 1943 Colonel Fox relieved Admiral Stephenson of the directorship of the commission and arrived in Cairo late the following month to assume control of the overseas program, having been promoted to brigadier general en route. He served as director until August 1943 when his title was changed to field director, and another Army officer, Col. (later Brig. Gen.) Stanhope Bayne-Jones, became director of the commission with headquarters in Washington, D.C.

PRUT RIVER
PLOESTI
BUCHAREST
SEVASTO
RIVER

General Fox

Neuropsychiatric Disorders—American soldiers in the Middle East theater had to accommodate themselves to widely divergent environments and cultural patterns. They also were exposed to climates completely dissimilar to those in their homeland. While the difficulty of adjustment in an overseas station in itself presented some problems stemming from separation from loved ones, familiar work, and the relative freedom of civilian life, long periods of exposure to the tropical climate imposed psychological and physiological stresses that frequently resulted in neuropsychiatric disorders.[40]

In the Persian Gulf area, for example,

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[40] (1) Maj John M. Flumerfelt, Hist of Neuropsychiatry in the Middle East. (2) Ltr, Lt Col Baldwin L. Keyes to Chief Surgeon, USAFIME, sub: Mental Fixtures in Tropics, 18 Feb 44, in ETMD Rpt, Feb 44. (3) Ltr, Maj Flumerfelt and Capt John T. Delehanty to Surg, Delta Serv Comd, sub: Discussion of (a) Effect of Climate upon Personnel (b) Neuropsychiatric Diseases, 9 Aug 44, in ETMD Rpt, USAFIME, Aug 44. (4) ETMD Rpts, USAFIME, May 44, Jan–Apr 45. (5) ETMD Rpt, West African Serv Comd, USAFIME, Aug 43. (6) ETMD Rpt, Central African Wing, ATC, Feb 44. (7) Hist of Med Activities, PGC.

the difficult climate and the initially poor living conditions troops endured resulted in neuropsychiatric casualties. The rate per 1,000 per annum was above 40 for most of 1943, but with the completion of semipermanent barracks, mess halls, and recreational facilities, the rate dropped to 16 in October 1943. Medical officers of the command considered it remarkable that in the early days the rate was not higher. At first many of these cases were repeatedly hospitalized in an attempt to salvage them for further duty, but it soon became apparent that a more liberal policy was needed in caring for them. More neuropsychiatric patients were evacuated to the zone of interior during the last half of 1943 and the first half of 1944.

The chief psychiatrist of the Middle East theater and the chief of the psychiatric section of the 38th General Hospital studied the effect of climate upon personnel and found that a definite tropical syndrome developed among many individuals assigned to tropical areas. The time required to develop the more severe syndromes varied with the individual and the area. Service in small isolated units in the desert or the jungles of central Africa produced some breakdowns in 3 months. In larger units stationed closer to centers of population and the more varied environments along the coast, the breaking point was reached in 6 months to a year or longer. After 18 to 24 months under tropical conditions the efficiency of almost anyone was greatly reduced. Characteristically, an individual affected with a tropical syndrome showed evidence of listlessness, slow speech, defective memory, poor thought content, and narrowed perspective. Although no obvious loss of intelligence occurred, the ability to use one's faculties was considerably impaired.

Col. Baldwin L. Keyes, head of the neuropsychiatric service in theater headquarters, after investigating cases of mental deterioration caused by lengthy tropical service, recommended that personnel be returned to the United States on rotation after not more than two years' service in the Middle East, and also advised that a rotation policy be established within the theater. The 2-year-rotation plan was favorably considered by the theater commander in the spring of 1944, but a new commanding general of the theater who arrived soon afterward did not back the recommendation of the chief neuropsychiatrist.

The depressing effect of having the 2-year-rotation plan scrapped was reflected in the rise in the hospital admission rates for neuropsychiatric diseases, which reached a peak of 31 per 1,000 per annum for July 1944. The increased admissions were mostly personnel who had been making borderline adjustments, building up hope for return on the proposed rotation policy. Rotation was again considered later in 1944, but the difficulty of getting replacements for those eligible for return precluded any effective application of the policy. Intratheater rotation finally began in 1945 when many were shifted from the more undesirable stations in the theater to places having a comparatively favorable climate.

Evacuation of mental patients to the United States was a serious problem in the early days of the theater, since no American hospital ships were available. Psychotics and severe psychoneurotics whose return to the zone of interior had been recommended clogged the theater's hospital wards for periods up to six months before they could be evacuated by infrequently departing American troop transports equipped with sick bays and medical personnel. The more numerous British hospital ships were also used, when they could be induced to accept this class of patient, but carried U.S. personnel only to North Africa or England for transshipment on U.S. vessels. In 1944, when the Air Transport Command routes through the Middle East to the China–Burma–India theater were well established, returning aircraft could be used for patients en route to the United States. Air evacuation worked admirably, and mental patients were responsible for no serious accidents to patients or personnel. From July 1942 to the end of 1944 neuropsychiatric disease led the list of causes for return of patients from the Middle East to the United States, and constituted over 35 percent of the total number returned. About a third of the neuropsychiatric cases evacuated had some history of psychiatric disorder before military service, the stresses present in the theater causing recurrences.

Beginning in the latter part of 1944, as many psychiatric cases as possible—including alcoholics—were treated on an outpatient basis, with only those wholly unable to perform their duties being admitted to the hospitals. It was felt that long periods of hospitalization tended to intensify symptoms rather than effect cures. The result of this policy was reflected in a substantial reduction in psychoneurotic patients presented to disposition boards for evacuation to the zone of interior.

Other Diseases—Gastrointestinal diseases constituted one of the greatest sources of lost manpower in the Middle East theater. Nonspecific diarrheas, bacillary and amebic dysentery, bacterial food poisoning, and the typhoid-paratyphoid group of infections were found in all areas. The factors contributing to the high incidence of these infections among natives of the Middle East were contaminated water supplies, lack of sewage disposal systems, generally insanitary conditions that promoted extensive fly breeding, and the personal habits of the individuals. These diseases, however, need not have been nearly as prevalent as they were. Men continued to arrive in the theater without proper training or discipline in hygiene and sanitation and continued to suffer a high diarrhea rate until the defects were made good. On the calendar-year average, this group of diseases accounted for more man-days lost than any other, and constituted 20 percent of hospital admissions for the period 1 July 1942 to 1 October 1943. The rates for intestinal diseases declined from year to year, owing in part to the intensive program of education in preventive medicine instituted in the theater by the Medical Department and in part to the use of sulfanilamide and later of sulfaguanidine.[41]

Contrary to most of the intelligence reports, which had indicated that respiratory diseases in the Middle East were of minor importance, this group of diseases constituted 15 percent of hospital admissions during the period 1 July 1942 to 1 October 1943. Infectious hepatitis caused some difficulty in late 1942 and early 1943, particularly among Ninth Air Force personnel stationed in the Western Desert of Egypt and Libya. Smallpox and bubonic plague, the former being widespread among the population, and the latter causing epidemics among the natives of Dakar, French West Africa, and the people living along the Suez Canal, were potential hazards to American troops. Immunization and control measures instituted by the Medical Department protected American troops so that the two diseases were of little military consequence.

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[41] (1) Annual Rpts, MD Activities, USAFIME, 1942, 1943. (2) Col Ward, Hist of Preventive Medicine in the Middle East, 19 Oct 41–23 Jun 44. (3) Hist, Med Sec, AMET. (4) Hist, Med Activities, PGC. (5) Ltr, Gen Sams to Col Coates, 12 Mar 59, commenting on preliminary draft of this chapter.

A group of diseases that puzzled medical authorities in the Middle East resulted in a request by the theater surgeon to The Surgeon General for special assistance. A small organization known informally as the Virus Commission stemming from the Army Epidermiological Board arrived in Cairo in April 1943, and soon set to work collecting information about sandfly (pappataci) fever, poliomyelitis, and infectious hepatitis—three epidemic diseases, presumably of virus origin, prevalent in the Middle East. Members of the commission set up a laboratory and office in the 38th General Hospital, where they conducted experiments on the transmission of the various virus diseases. Members of the commission made field trips to nearby Egyptian areas as well as to more distant places during the year. By mid-December 1943 the commission closed its Middle East laboratory after making valuable contributions to the literature of the diseases they studied.

The intense heat of the Persian Gulf area was responsible for various forms of discomfort, including heatstroke, heat exhaustion, and prickly heat. Medical Department officers fought the effects of heat in a variety of ways. A liberal daily intake of water and fruit juices was recommended, and the men were advised to take a salt tablet with each glass of water. Alcohol, recognized as one of the greatest contributory factors, could not be entirely eliminated, but the danger was constantly emphasized in the slogan "If you want to live, don't drink." Intravenous injections of normal salines were used in treatment of heatstroke and heat exhaustion. In the summer of 1942, before the U.S. medical authorities had learned the use of salines, ice packs, wrapped in toweling and soaked in ice water, together with electric fans adjusted to blow across the beds, served to reduce body temperatures by two or three degrees.[42]

To make living conditions more bearable, the Engineer Corps installed air conditioning equipment when available, but most of the time "desert coolers" were used. These improvised devices consisted of crates filled with straw, camel thorn, or excelsior, which were set in windows. They operated by having a fan blow air through them while water trickled down through the filler material. This equipment reduced temperatures of rooms from twenty to thirty degrees. The adoption of special morning working hours for the summer months also helped reduce casualties. Heatstroke centers, where men could go at the first signs of heatstroke or heat exhaustion, cured many potentially serious cases.

Another problem that was common to the whole Middle East area early in the period was that of chronic vitamin deficiency. Detailed plans for the Persian

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[42] Ltr, Van Vlack to Col Coates, 23 Mar 59, commenting on preliminary draft of this chapter.

Gulf included vegetable gardens for which land and water rights had already been obtained, but these were canceled when the troops arrived because the normal ration was supposed to contain an adequate supply of vitamins. Many men, however, did not eat all of the rations issued. Very few uncontaminated green vegetables were obtainable locally, and the effects of vitamin deficiency were clearly observable. This situation was remedied in 1943, after a nutritional officer had been sent to the theater and had testified to the need for vitamins.[43]

Still another disease problem peculiar to the area was leishmaniasis, or Bagdad sore. The disease was classified as exotic and so the drug required to cure it could be had only by special order "as required," and then only in small quantities, so that it was impossible to combat the condition effectively.[44]

Dental Service

The dental service of the Middle East theater began with the formation of the theater in 1942, but it was not until well into 1943 that the service could be considered adequate. A high noneffective rate because of adverse climatic conditions reduced the number of dental officers available at any one time, and the wide dispersal of units made it necessary to place dentists with units too small for the most economical functioning. To compensate, certain dentists were frequently moved from one small station to another. During the period of growth in the Middle East theater there was a strong tendency to overburden dental officers with work not connected with their professional training. Dentists usually received such nonprofessional assignments when they were not able to work full time because of lack of equipment. Once this practice started, it became difficult to get dentists relieved of such jobs even when the burden of dental treatment increased.[45]

In the Persian Gulf area, dental officers arrived with the first major shipment of troops in December 1942, although one Dental Corps officer had been in Iran with the Iranian Mission since March. About eleven dental officers were in the area in December 1942, but eventually their number in proportion to the troop strength of the command became large compared to other overseas areas. More were needed because in addition to those stationed with hospitals and dispensaries, others had to minister to the needs of units strung along the transportation routes to the Soviet Union.

Although the British allowed U.S. Army dentists to use dental facilities in British Army hospitals pending completion of American installations, a serious problem in the early days was the lack of facilities. The shortage of dental equipment, which lasted until mid-1943, seriously handicapped the dental service

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[43] *Ibid.*

[44] Ltr, Col Adams to Col Coates, 7 Apr 59, commenting on preliminary draft of this chapter.

[45] (1) Annual Rpt, Med Dept, USAFIME, 1942 and 1943. (2) Hist, Med Sec, AMET. (3) Ltr, Maj George F. Jeffcott, Dental Surg, USAFIME, to Brig Gen Robert H. Mills, Asst to the SG, 29 Sep 42. (4) Hist of Med Activities, PGC. (5) Dental Hist of PGC, Dec 42–Aug 44, and 1 Jan–31 Mar 45. (6) Dental supplement to Annual Rpt, Surg, PGC, 1943. (7) Annual Rpt, Med Dept Activities, PGC, 1944. (8) Annual Rpts, Med Dept Activities, Delta, Eritrea, and Levant Serv Comds, 1942 and 1943. (9) Annual Rpt, Med Dept Activities, Middle East Serv Comd, 1944. (10) Annual Rpt, Med Dept Activities, Central African Wing, ATC, 1943.

Post Dental Clinic, Khorramshahr, Iran

of the theater. In December 1942 the thirty-nine dental officers then in the theater had a total of 6 field sets, 2 units and chairs, 1 incomplete laboratory, and a few miscellaneous items purchased locally. The British loaned field chests to U.S. Army units arriving in the Middle East without dental equipment. During 1943 adequate facilities were established and enough equipment arrived so that the dentists could establish a program of improving the dental health of the soldiers in the theater.

Dental service throughout the Central African Wing of the Air Transport Command was provided by ATC dental officers and local station hospitals. A dental officer and an enlisted man with portable equipment flew to stations that did not have resident dentists.

The greatest difficulty experienced by the dental service related not to hardships or shortages in equipment, but to the lack of promotions. The Dental Corps suffered from Table of Organization troubles about which very little could be done within the theater. Dental officers found themselves passed at regular intervals by men of other branches who often had less experience and ability. Enlisted assistants had similar morale-destroying problems, for many of them served on detached service to dental clinics that had no Tables of Organization.

The chief dental officer of the U.S. Army Forces in the Middle East was Lt. Col. George F. Jeffcott, who was succeeded at the beginning of 1944 by Lt. Col. Thomas A. McFall, already dental surgeon of the Delta Service Command and chief of the dental service for the 38th General Hospital. The dental activities of the Persian Gulf Command, during the period of its autonomy, were directed by Lt. Col. Herbert L. Gullickson, who came to the theater as dental surgeon of the 21st Station Hospital.

Veterinary Service

Except for a small number of horses used for recreational and military police purposes, the Middle East theater did not use animals for carrying on its duties. Consequently, members of the U.S. Army Veterinary Corps were chiefly concerned with meat and food inspection and supervision over animals and other food products raised for consumption of theater troops. The veterinary service conducted meat and dairy hygiene activities at various stations in the commands of the theater. Because of the low sanitary standards prevailing throughout the Middle East, veterinary officers experienced considerable difficulty in obtaining suitable food products of local origin. All meat, dairy, and other food products had to be inspected with great care to ensure strict compliance with U.S. Army standards. Whenever establishments maintaining satisfactory standards were located, the veterinary service recommended them as sources of supply. Products most commonly obtained in this way were poultry, eggs, and seafood. However, the majority of food products came in by ship from the United States, and large quantities of beef were secured through the British Government from Australia and New Zealand.

Various enterprises for the production of food for American troops were supervised by the veterinary service. A Cairo chicken dealer built a sanitary poultry-killing and dressing establishment with the advice and suggestions of the Delta Service Command veterinary officer. The U.S. Army obtained fresh milk that was pasteurized under the supervision of the veterinary service in Palestine. In Eritrea, the veterinary service of the Eritrea Service Command and the theater veterinarian put into operation a small but modern slaughterhouse, constructed especially for U.S. military use. In the opinion of Veterinary Corps officers in the theater, it was superior to any abattoir found anywhere in the Middle East. In Eritrea and Palestine the veterinary service operated pig farms, and in Egypt a veterinary officer rendered assistance in the operation of a piggery. These pig-raising projects helped dispose of garbage and provided a source of reliable pork. At the various stops along the Central African Wing, ATC, route two veterinary officers and an enlisted man inspected the food supplies of the personnel.

Veterinary officers arrived in the Persian Gulf area late in 1942 and quickly began the tasks of inspecting the food supplies of the troops. They also made surveys and recommendations regarding storage, refrigeration, and slaughterhouses. By the end of 1943, the veterinary strength of the command had reached its peak of 8 Veterinary Corps officers and 12 enlisted men, distributed in the northern, central, and southern areas of Iran. The veterinarians were of the opinion that an oversupply of their profession existed in the command and that 2 officers and 15 enlisted men would have been sufficient. Although Veterinary Corps officers were officially charged only with the inspection of meat, eggs, and other food products, the command authorized them to establish several animal clinics to care for pets acquired by members of the Army. Veterinary care was provided for these animals whenever time could be spared from food inspection.

Decline of Medical Activities in the Demobilization Period

Immediately after the surrender of Japan on 14 August 1945, the medical service of the Africa–Middle East theater began a program designed to keep up with the demobilization instructions issued by the War Department. The theater surgeon carried out a policy of reducing or reorganizing all medical installations in proportion to reductions in theater strength. Most medical units were either inactivated or transferred from the theater between September and December 1945. By the end of the year only the 38th General Hospital at Casablanca, the 25th Station Hospital at Roberts Field, the 56th Station Hospital at Camp Huckstep, and the 367th at Wadi Seidna in the Sudan remained in the theater. During this period the Persian Gulf Command completed its mission, and its liquidation was entrusted to the Africa–Middle East theater. The theater disposed of the Persian Gulf's surplus personnel and equipment and inactivated the command the last day of December.[46]

Although most of the theater's commands were still in existence at the end of 1945, they were working toward an early close-out date. Where station hospitals had formerly served, medical detachments operated to handle the diminishing military population of the commands. The two largest commands of the theater, the North African and the Middle East Service Commands, as well as the minor command in Liberia, were inactivated during the first quarter of 1946, and the theater itself disbanded on 31 May 1946. The 56th Station Hospital, the last remaining theater hospital, closed its doors the day the theater was inactivated. The personnel of the service commands were assigned to 26 residual teams established to act as custodians of U.S. Government property awaiting sale by the Foreign Liquidation Commission. Some of the teams had one medical or surgical technician assigned, and every team had either Air Transport Command, British, or local civilian hospital facilities available for the medical care of its personnel. The remaining responsibility of the Medical Department was simply to provide sufficient medical attendance for the few remaining troops.

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[46] (1) Med Hist, AMET, vol. II, pp. 319–23. (2) Final Rpt, Med Sec, AMET, Oct 45–Mar 46. (3) Hist of AMET, Supplement, Tab, Med Sec, AMET, separate rpts for following periods: Oct–Dec 45, 1 Jan–10 Mar 46, 11 Mar–30 Apr 46, MS, OCMH. (4) An. C, Chief Surgeon, Final Hist Rpt, Hq, AMET, through 31 May 1946, in ETMD Rpt, May 46.

CHAPTER III

Conquest of North Africa

The invasion of French North Africa on 8 November 1942 was the first action of World War II by U.S. ground forces against the European Axis. The beaches of Morocco and Algeria and the rugged mountains and barren wastes of Tunisia were the testing grounds both for the combat forces and for the medical troops that supported them in the field and behind the lines. It was in North Africa that officers, nurses, and enlisted men of the Army Medical Department perfected the techniques and developed the organizations that were to save thousands of lives in Italy and France.

Prelude to Invasion

Genesis of the North African Campaign

As early as January 1942, when Prime Minister Winston S. Churchill and his Chief of Staff, General Sir Alan Brooke, were in Washington for high-level strategic discussions, the possibility of launching an Allied military campaign in northwest Africa was suggested, but resources available at that time were clearly inadequate for such an undertaking. The matter was again discussed in June, in connection with the dangerous situation on the Russian front and the precarious position of the British forces in Africa, where the Germans had been halted barely short of Cairo. In July, the Combined Chiefs of Staff in London, under strong pressure from the President, made the decision to mount the operation at the earliest possible date. D-day was later set for 8 November. Allied landings in Morocco and Algeria were to be co-ordinated with a planned offensive by the British Eighth Army, to be launched from the El 'Alamein line in the fall. Lt. Gen. Dwight D. Eisenhower was designated to command the operation, known by the code name TORCH, and was directed to begin planning at once. Allied Force Headquarters (AFHQ) for the North African campaign was set up at Norfolk House in London in mid-August, with primary responsibility for planning delegated to Maj. Gen. Mark W. Clark, Eisenhower's deputy commander.[1]

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[1] Sources for the genesis and military planning of TORCH are: (1) *Biennial Report of the Chief of Staff of the United States Army, July 1, 1941 to June 30, 1943, to the Secretary of War* (Washington, 1943), pp. 18–20; (2) History of Allied Force Headquarters, August 1942–December 1942, vol. I; (3) Winston S. Churchill, *The Hinge of Fate* (Boston: Houghton Mifflin Company, 1950); (4) Dwight D. Eisenhower, *Crusade in Europe* (Garden City, New York: Doubleday and Company, 1948); (5) Mark W. Clark, *Calculated Risk* (New York: Harper and Brothers, 1950); (6) George F. Howe, *Northwest Africa: Seizing the Initiative in the West,* UNITED STATES ARMY IN WORLD WAR II (Washington, 1957); (7) Craven and Cate, eds., *Europe: TORCH to POINTBLANK;* (8) Leo J. Meyer, "The Decision To Invade North Africa (TORCH)," *Command Decisions* (Washington, 1960), pp. 173ff; (9) Samuel Eliot Morison "History of United States Naval Operations in World

The strategical and psychological importance of the operation can scarcely be overestimated. A successful TORCH would relieve the hard-pressed Russians by opening a diversionary front much earlier than an invasion of continental Europe could be launched; it would forestall the possibility of a German breakthrough into the oil-rich Middle East to join hands with the Japanese; it would open the Mediterranean to Allied shipping and render more secure the sea and air routes over the South Atlantic; it would put U.S. ground troops into action against the Germans; and, finally, if it could be accomplished without fatally embittering the French, it would open the way for France to re-enter the war on the Allied side. By the same reasoning, however, the venture was hazardous. To fail would spell disaster.

Plans for Operation TORCH

The plans developed by General Clark and his collaborators called for simultaneous landings at three separate points. British naval units were to support operations inside the Mediterranean; U.S. units those in the Atlantic. The Twelfth U.S. Air Force, under command of Brig. Gen. James H. Doolittle, was activated and trained to give necessary air support as soon as airfields could be captured and made operational.

The Western Task Force, which was to storm the beaches on the Atlantic coast of Morocco in the vicinity of Casablanca, was commanded by Maj. Gen. George S. Patton, Jr. Totaling approximately 34,000 men, it consisted of the 2d Armored Division, the 3d Infantry Division, and two regimental combat teams of the 9th Infantry Division. The Western Task Force trained in the United States and sailed for Africa under convoy of the U.S. Navy.

The Center Task Force, under command of Maj. Gen. Lloyd R. Fredendall, was to go ashore on beaches flanking Oran, some 250 miles inside the Mediterranean. This force was made up of elements of II Corps, built around the 1st Infantry Division, half of the 1st Armored Division, and a force from the 509th Parachute Infantry Regiment, reinforced by corps troops to a strength of more than 40,000. The Center Task Force trained in England and was convoyed by British warships.

The Eastern Task Force, with a complement of 23,000 British and 10,000 U.S. troops and commanded by Lt. Gen. K. A. N. Anderson of the British First Army, was to attack Algiers. Maj. Gen. Charles W. Ryder, commander of the 34th Infantry Division, led the American element, which consisted of two reinforced regimental combat teams (RCT), one each from the 9th and 34th Infantry Divisions, and a Ranger battalion. Like the Center force, the Eastern Task Force trained in England and was accompanied to its destination by units of the British Navy. In the hope of securing more willing co-operation from the French, who were still resentful toward their former British allies for the earlier sinking of French vessels at Oran, General Ryder and his American troops were to spearhead the Eastern Task Force assault.

Both personnel and equipment for medical support of the task forces were to be held to the absolute minimum. The medical section of Allied Force Head-

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War II, vol. II, *Operations in North African Waters, October 1942–June 1943* (Boston: Little, Brown and Company, 1950), pp. 3–42, 181–186.

General Kenner Receiving the DSM *from General George C. Marshall.*

quarters was headed by a British Director of Medical Services, Brigadier, (later Maj. Gen.) Ernest M. Cowell. The ranking American medical officers were Cowell's deputy, Col. John F. Corby, and Corby's executive officer, Lt. Col. (later Col.) Earle Standlee. The decentralized nature of the operation, however, placed primary responsibility for planning and organizing combat medical support on the task force surgeons. Col. Richard T. Arnest, II Corps surgeon, conducted planning for the Center Task Force in England, while Col. (later Maj. Gen.) Albert W. Kenner, surgeon of the Western Task Force, worked in Washington. Medical service for the Eastern Task Force was planned and largely supplied by the British, the force surgeon being the Deputy Director of Medical Services of the British First Army, Brigadier E. W. Wade. Each force surgeon operated pretty much on his own, within a broad policy framework; there was little or no co-ordination between the forces. The Twelfth Air Force surgeon, Col. Richard E. Elvins, functioned independently of both AFHQ and the task force surgeons in the preparation of medical plans, including plans for air evacuation.[2]

From the medical point of view, the North African campaign was difficult and largely extemporized. The distances were vast: 445 miles by air from Casablanca to Oran; 230 miles from Oran to Algiers; and another 400 air miles from Algiers to the ultimate objective, the Tunisian ports of Tunis and Bizerte. By way of the antiquated, single-tracked rail line that connected the coastal cities, the distances were considerably greater. Highways were few in number and poor in quality, not built to withstand the punishment inflicted by tanks and heavily loaded trucks moving in steady streams from ports to supply depots and to the fighting fronts. Water was scarce and always subject to suspicion; sanitation was primitive; malaria, typhus, dysentery, cholera, and venereal diseases were known to be widely prevalent, with plague a constant threat in the seaports. All of these factors had to be taken into account in medical preparations for the invasion and for the subsequent campaign in Tunisia.

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[2] General sources for medical planning of Operation Torch, in addition to general sources cited above, are: (1) 2d Lt. Glenn Clift, MS, Field Operations of the Medical Department in the Mediterranean Theater of Operations, United States Army (hereafter cited as Clift, Field Opns), pp. 1–20; (2) Hist of the Twelfth Air Force Med Sec, Aug 42–Jun 44; (3) F. A. E. Crew, "History of the Second World War," *The Army Medical Services: Campaigns* (London: Her Majesty's Stationery Office, 1957), vol. II; (4) Link and Coleman, *Medical Support of the Army Air Forces in World War II*, pp. 419–24.

Planning for the initial assault also had to take into account a shortage of shipping space that would limit supplies and restrict medical support to little more than could be given by the divisional medical units organic to the participating formations. For the U.S. increment, supplies were to be in the form of the standard medical maintenance units, each sufficient to support 10,000 men for thirty days, augmented by special drugs and biologicals appropriate to the conditions anticipated.

In bed strength the Eastern Task Force, which was to lead the advance into Tunisia, fared better than either of the other landing groups. In addition to the organic units, the D-day troop list included a British field ambulance, comparable to an American clearing company; 2 light casualty clearing stations (200 beds each), equivalent to small evacuation hospitals, each with a field transfusion unit and 2 field surgical units attached; 2 British general hospitals, more mobile than their U.S. counterparts, of 600 beds each; and 4 teams of the U.S. 2d Auxiliary Surgical Group, with enlisted men substituted for nurses. Beds would thus be available for about 4.8 percent of the command during the first four days. The second convoy, which was to reach Algiers on D plus 4, was to carry 2 British general hospitals of 200 beds each and one of 1,200 beds, but the ratio would not be raised since troop strength would also be doubled by that time.

The Center Task Force was to carry two hospitals in the assault—the 400-bed 48th Surgical and the 750-bed 38th Evacuation—or beds for less than 3 percent of the command. Another 750-bed unit, the 77th Evacuation Hospital, was scheduled for the second convoy, which would reach Oran on D plus 3 along with the 51st Medical Battalion, but a 50-percent increase in troop strength would keep the bed ratio barely above 3 percent.

COLONEL ARNEST

For the Western Task Force, sailing from the United States, shipping was even more restricted, and no hospitals of any kind were included in the D-day troop list. Since the second convoy for the Western Task Force was not due for several days, transports were to be supplied with equipment and personnel to serve as floating hospitals during the first days of the assault.

In each of the landing operations the Navy—British or American—was to be responsible for all medical care between the port of embarkation and high water on the landing beaches, and naval beach groups were to help in the collection and care of casualties. British hospital ships were to evacuate patients from Algiers and Oran to the United Kingdom. Since no U.S. hospital ships were available, there would be no alternative for the Western Task Force but to evacuate casualties by returning transports or hold them ashore for future disposition.

Plans for combat medical service in the landing phase were spelled out in considerable detail, but were based largely upon manuals prepared without realistic knowledge of amphibious operations. Participation by U.S. observers in the costly Dieppe raid of 19 August 1942 was the nearest approach to a seaborne landing on a hostile shore in modern U.S. Army experience.[3] It is therefore not surprising that casualty estimates were too high, or that conditions under which medical troops would operate were misjudged.

Medical Support in the Landing Phase

The Allied assault on the Moroccan and Algerian coasts took place as scheduled in the early hours of 8 November 1942. It was hoped that the French would not resist the landings. Secret negotiations to this end were carried on right up to D-day itself, climaxed by a personal appeal from President Roosevelt, which was broadcast in French over shortwave radio as the troops began to go ashore. On most of the beaches, the first waves of combat troops did get ashore without encountering more than sporadic small arms fire, but before objectives were gained there was fighting in every sector.

Eastern Task Force

Algiers was first to surrender, owing largely to secret contacts with military commanders there and to the unexpected presence in the city of Admiral Jean-François Darlan, Vichy naval commander, whose authority was second only to that of Marshal Henri Pétain himself. The city lies along the western rim of a half-moon-shaped bay, whose eastern extremity is Cap Matifou. Seven or eight miles west of the city the coast dips sharply to the south, interrupted only by Cap Sidi Ferruch, which juts into the Mediterranean on a line with the center of Algiers and about ten miles distant.[4] *(Map 6)*

The 39th Regimental Combat Team of the 9th Division, with elements of the British 1st Commando attached, went ashore east of Cap Matifou in the early hours of 8 November. Landing craft used were small and fragile by later standards, and boat crews were inexperienced. It is not surprising, therefore, that many of them piled up in the surf and others

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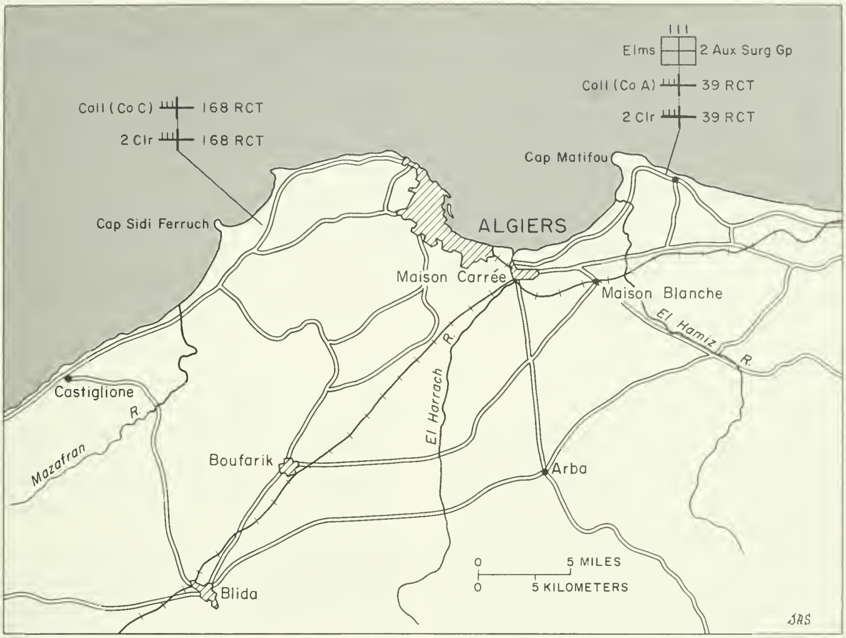
[3] Lt. Gen. Lucian K. Truscott, Jr., the chief U.S. observer at Dieppe, gives his own account in *Command Missions, A Personal Story* (New York: Dutton, 1954), pp. 62–72. The medical story of the raid, which suffered over 50 percent casualties in killed, wounded, and missing, is in W. R. Feasby, *Official History of the Canadian Medical Services, 1939–1945* (Ottawa: E. Cloutier, Queen's Printer, 1956), pp. 113–22.

[4] Sources for military operations of the Eastern Task Force are: (1) Opns Rpt, Eastern Task Force; (2) Howe, *Northwest Africa;* (3) Morison, *North African Waters.* Medical sources primarily relied upon are: (4) Rcd of Events, 15 Oct–8 Nov 42, by various officers of the 109th Med Bn, Co C; (5) Diary, Surg Teams 1 and 2, Ortho Team 1, Shock Team 1, 2d Aux Surg Gp, in Rpts of Professional Activities of Surg Teams, vol. I; (6) Clift, Field Opns, pp. 52–57. (7) Crew, *Army Medical Services: Campaigns,* pp. 293–97. Negotiations with the French, both before and after the landings, are detailed in (8) Robert Murphy, *Diplomat Among Warriors* (Garden City, N.Y.: Doubleday, 1964), pp. 108–43.


Elms
2 Aux Surg Gp
Coll (Co A)
39 RCT
2 Clr
39 RCT
Coll (Co C)
168 RCT
2 Clr
168 RCT
Cap Matifou
Cap Sidi Ferruch
ALGIERS
Maison Carrée
Maison Blanche
El Hamiz R.
El Harrach R.
Castiglione
Mazafran R.
Boufarik
Arba
Blida
0 5 MILES
0 5 KILOMETERS

MAP 6—Medical Support of Eastern Task Force

were brought ashore at the wrong beaches. Aside from sporadic fire from coastal batteries on Cap Matifou, however, no opposition was encountered at the beaches, and the combat team quickly pressed inland and captured Maison Blanche airfield.

The 168th RCT of the 34th Infantry Division and the bulk of the British 1st Commando landed just north of Cap Sidi Ferruch, but here, too, the invaders were widely scattered because of faulty navigation. Only the absence of opposition enabled the force to regroup and move inland toward Algiers by daylight. The commandos, meanwhile, had received the surrender of the fort at Sidi Ferruch without a fight, and, with the aid of friendly French officers, the airfield at Blida had been neutralized. The British 11th Infantry Brigade landed without opposition some twenty miles south of Cap Sidi Ferruch simultaneously with the more northerly landings and moved inland to protect the flank of the 168th RCT.

The only seriously opposed landings were those of the 6th Commando north and west of Algiers, where difficulties in assembling and loading the assault boats delayed the landings until after daylight. Here the commandos had to call for the support of naval gunfire and of carrier-based planes to win their objective by late afternoon. An attempt by two British destroyers to enter the harbor before dawn had proved unsuccessful. One of the vessels was forced to withdraw after suffering severe damage from shore batteries. The other succeeded in ramming the boom and landing a detachment of the 135th RCT, 34th Division, but the troops were pinned down and taken prisoner, while the destroyer withdrew so severely damaged that she later sank.

By late afternoon of D-day Algiers was surrounded, its airfields were in the hands of the Allies, and those of its coastal fortifications that had not capitulated were at the mercy of Allied naval guns and bombers. Darlan, who had been in contact with Robert Murphy, the U.S. diplomatic representative in North Africa since the eve of the landings, met with General Ryder early in the evening and agreed to a local cease-fire. After two days of negotiation an armistice was signed, to be effective shortly after noon on 11 November. Negotiations continued until 13 November, when Darlan was recognized as *de facto* head of the French Government in North Africa.

In addition to its own medical detachment, each of the U.S. regimental combat teams that spearheaded the Algiers landings was accompanied by a collecting company and a clearing platoon of the medical battalion organic to its parent division—Company A and the 2d Platoon of Company D, 9th Medical Battalion, with the 39th RCT; and Company C and the 2d Platoon of Company D, 109th Medical Battalion, with the 168th.

On the beaches east of Cap Matifou, where the 39th RCT made its landings, the collecting company was put ashore during the morning of D-day, but most of its equipment remained on shipboard. Without vehicles to follow the combat troops and with little in the way of medical supplies, the company remained of necessity close to the landing area in the vicinity of the beach dressing station set up by British naval personnel. Casualties were held at the dressing station because the sea was too rough to permit evacuation to the ships and no hospital facilities were available on shore.

A radio call for more medical personnel early in the afternoon brought Capt. (later Maj.) Paul L. Dent and Capt. (later Maj.) William K. Mansfield of Surgical Team No. 1, commanding officer and executive, respectively, of the 2d Auxiliary Surgical Group detachment, to the beach about 1600, but they were unable to bring equipment with them. A bombing raid, rough seas, and the coming of darkness prevented the landing of more surgical group personnel or of the clearing station they were to support, so Captains Dent and Mansfield worked through the night at the naval beach dressing station.

The quick end of hostilities on the 8th enabled the two surgical group officers to evacuate more than twenty patients the next morning to the dispensary at Maison Blanche airfield about fifteen miles inland, using trucks and borrowed French ambulances. The clearing platoon of the 9th Medical Battalion and the remaining eighteen officers and enlisted technicians of the 2d Auxiliary Surgical Group did not come ashore until 11 November, when the ships carrying them docked at Algiers. A hospital was then set up in a schoolhouse in Maison Carrée, about midway between the airfield and Algiers. On 13 November the hospital moved to Fort de l'Eau on the bay north of Maison Blanche, where it was operated jointly by the collecting company and the clearing platoon of the 9th Medical Battalion and the four surgical teams.

On the beaches west of Algiers, where the 168th RCT landed, the first collecting company personnel came ashore at 0730 on D-day, but were landed at the wrong beach and were forced to make a 10-mile march carrying equipment on litters to reach the battalion aid station they were to support. The clearing platoon, meanwhile, had landed at 0800, and set up station in conjunction with the British 159th Field Ambulance in the basement of a winery near Sidi Ferruch.

The remainder of the collecting company came ashore about 1000, but the only ambulance to be unloaded on D-day was not available until evening and did not reach the forward station until 0900, D plus 1. A British surgical team joined the clearing station on 9 November. Later that day the clearing platoon and the field ambulance took over the Mustapha civil hospital in Algiers, which quickly expanded from 100 to 300 beds, functioning as an evacuation hospital.

Fortunately, there were few casualties on D-day when the medical service in landing areas would not have been prepared to deal adequately with them. Most of those occurring in the next few days resulted from German bombings and from land mines. Only 93 U.S. soldiers were hospitalized during the first week of the Algiers campaign. Of these, 58 were admitted for battle wounds, 13 for injuries, and 22 for disease.[5]

Center Task Force

In the central sector the strategy employed by General Fredendall was in all respects similar to that used by the Eastern Task Force. Like Algiers, Oran lies on a crescent-shaped bay, protected by headlands on either side. Here the strongpoints were the fortified military harbor at Mers el Kébir, three miles west of Oran; and the town of Arzew, twenty-five miles to the east. Both positions were outflanked.[6] (*Map 7*)

One armored column, comprising about one-third of Combat Command B,

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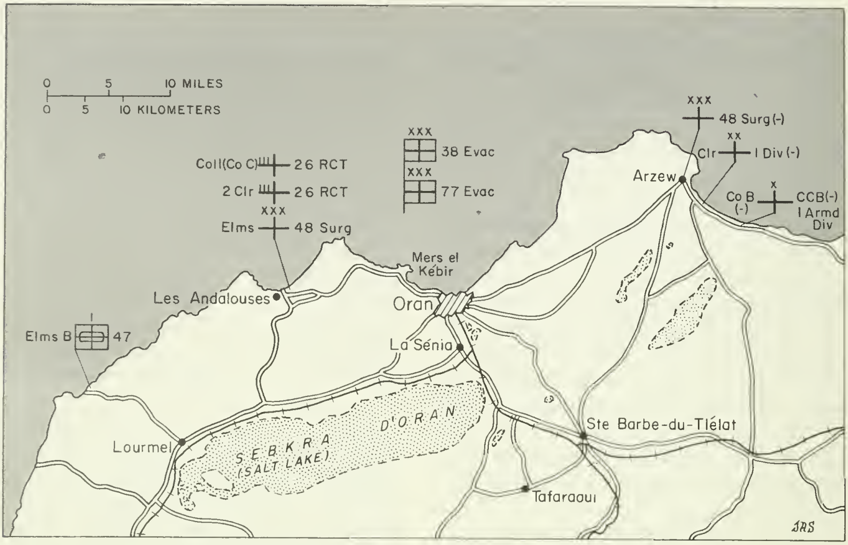
[5] Rpt, Hq SOS ETO, Off of the Chief Surgeon, 15 Feb 43. These figures cannot be fully reconciled with those given in the Final Report, Army Battle Casualties and Nonbattle Deaths in World War II. The official tabulation shows 1,017 U.S. Army (including Air Forces) personnel wounded or injured in action for the whole North African theater for the month of November 1942. The combined wounded and injured figure for the three task forces for the week of 8–14 November as given in the document cited above is 1,224. The time is relatively comparable, since U.S. forces were not engaged before 8 November or during the remainder of the month after 14 November. The larger figure in the SOS report is presumably owing to the inclusion of some naval personnel in the Western Task Force figures, but these are not separable. Hospital admissions for injury in the TORCH operation were not differentiated as to battle or nonbattle origin.

[6] Combat sources for the Center Task Force are: (1) Opns Rpt, Center Task Force; (2) Howe, *Northwest Africa;* (3) H. R. Knickerbocker and others, *Danger Forward: The Story of the First Division in World War II* (Washington: Infantry Journal Press, 1947); (4) George F. Howe, *The Battle History of the 1st Armored Division, "Old Ironsides"* (Washington: Combat Forces Press, 1954); (5) Morison, *North African Waters.* Medical sources primarily relied upon are: (6) Annual Rpt, Surg, II Corps, 1942; (7) After Action Rpt, 1st Med Bn, 20 Nov 42; (8) Hist, 47th Armd Med Bn, 1 Oct 42–9 May 43; (9) Annual Rpt, 48th Surg Hosp, 1942; (10) Annual Rpt, 38th Evac Hosp, 1942; (11) Clift, Field Opns, pp. 40–48. See also, (12) Ltr, Col Rollin L. Bauchspies to Col Coates, 15 Apr 59, commenting on preliminary draft of this volume.


0 5 10 MILES
0 5 10 KILOMETERS
Coll(Co C) 26 RCT
2 Clr 26 RCT
XXX
Elms 48 Surg
XXX
38 Evac
XXX
77 Evac
XXX
48 Surg(-)
XX
Clr 1 Div (-)
X
Co B (-) CCB(-) 1 Armd Div
I
Elms B 47
Les Andalouses
Mers el Kébir
Oran
Arzew
La Sénia
Lourmel
SEBKRA D'ORAN
(SALT LAKE)
Ste Barbe-du-Tlélat
Tafaraoui
JRS

MAP 7—Medical Support of Center Task Force

1st Armored Division, landed some thirty miles west of Oran. The landing was unopposed, but difficulties in getting the vehicles ashore delayed any advance until about 0900. The column then struck eastward to Lourmel and followed the north rim of the Sebkra d'Oran, the long salt lake that parallels the coast about ten miles inland. Against only sporadic opposition, the column reached and seized La Sénia airfield, south of Oran, on the morning of 9 November.

A simultaneous landing at Les Andalouses 15 miles west of Oran by the 26th RCT, 1st Infantry Division, was only briefly interrupted by an unexpected sand bar, and the men were moving inland by daylight when French coastal guns began shelling the transport area. By the end of the day, elements of the 26th had pushed beyond Mers el Kébir, and that strongpoint was cut off from the west and south.

The main point of attack was in the vicinity of Arzew. There the 1st Ranger Battalion got ashore undetected just north of the town and quickly seized the two forts dominating the harbor. The 16th and 18th RCT's of the 1st Division and the larger portion of Combat Command B were then able to land from transports moved close to shore. There was no opposition until daylight, by which time the assault units were well on their way to their first objectives. Combat Command B raced southwest some twenty-five miles to seize Tafaraoui airfield and held it against French counterattacks the following day. The 16th and 18th RCT's moved on Oran by parallel routes, the 18th being delayed by stubborn resistance at St. Cloud before bypassing that town.

A direct assault on Oran itself was attempted at H plus 2 by two British destroyers carrying more than 400 combat troops, most of them from the 1st Armored Division, but both ships were destroyed inside the breakwater and all men aboard were killed or captured. Equally unsuccessful, though less disastrous, was an attempted airdrop on Tafaraoui airfield by 556 men of the 2d Battalion, 509th Parachute Infantry Regiment, flying from England. Faulty navigation and a mix-up in signals dropped a number of the men in Spanish Morocco, where they were interned. Others dropped at various points far west of their objective. Only one plane reached the field, but it met with antiaircraft fire and turned back without dropping its men. Almost half of the paratroopers were still missing by 15 November.

The end of the day, 9 November, found the invaders converging on Oran from all sides. Armored spearheads entered the city the next morning, the 10th, and a cease-fire order was issued at 1215.

The combat elements of the Center Task Force received varying degrees of medical support. The armored column landing west of Oran was accompanied by its own medical detachment and by a small group from the organic 47th Armored Medical Battalion. The 26th Regimental Combat Team, 1st Division, which hit the beaches east of Oran, received medical support from a collecting company and a clearing platoon of the organic 1st Medical Battalion, and from a detachment of 6 officers, 6 nurses, and 20 enlisted men of the 48th Surgical Hospital. The 16th and 18th RCT's of the 1st Division, landing at Arzew, were each accompanied by a collecting company of the 1st Medical Battalion, with one clearing platoon backing up both regiments. Combat Command B was supported by Company B of the 47th Armored Medical Battalion, less the detachment with the western column. Third-echelon support came from the 400-bed 48th Surgical Hospital and, after the surrender, from the 38th and 77th Evacuation Hospitals.

Arzew was already in Allied hands by the time most of the medical personnel came ashore. About noon of D-day a clearing platoon of the 1st Medical Battalion, although most of its equipment was still afloat, took over a dirty and inadequate civil hospital capable of accommodating 75 patients. The French doctors in attendance remained to care for natives already there, and for French and native prisoners as they were brought in. Personnel of the 48th Surgical Hospital came ashore in landing craft during the afternoon, but without equipment and scattered over a 2-mile area. As soon as the unit was consolidated, 3 of its surgeons and 3 nurses were sent to the civil hospital.[7] The detachment was augmented during the night by 4 operating teams of 2 surgeons and a nurse each. These teams worked throughout the night of 8–9 November by flashlight.

The 48th Surgical set up its own hospital in nearby French barracks on D plus 2, taking over operation of the

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[7] "Having nurses arrive with the 48th Surgical Hospital at Arzew on D-day was very helpful in caring for the wounded. However, I did not feel afterwards that the risk was fully justified and would not do it again." Ltr, Col Arnest to Col Coates, 10 Nov 58, commenting on preliminary draft of this volume.

RUAGA et Fils

NURSES OF THE 48TH SURGICAL HOSPITAL *marching from the Arzew docks to join their unit, 9 November.*

Arzew civil hospital at the same time. Equipment and supplies were secured from the British Navy, Army units in the area, the French, and the 38th Evacuation Hospital—which had arrived at Arzew on 9 November but was not yet in operation. The 48th Surgical's own equipment did not come ashore until 13 November. The maximum number of patients treated at any one time was 480 and included American, British, French, and native.

About noon of D-day elements of Company B, 47th Armored Medical Battalion, assisted by a detachment from the Twelfth Air Force surgeon's office, set up an aid station in the city hall at St. Leu, four or five miles southeast of Arzew. The detachment moved to Tafaraoui airfield on 10 November, and the St. Leu station was turned over to Air Forces control two days later.

On 11 November, the day after the surrender of Oran, the 38th Evacuation

Hospital moved inland to St. Cloud, where heavy fighting had overtaxed the available medical facilities. While equipment was being gathered together at the prospective site, surgical teams from the 38th joined elements of the 1st Division Clearing Company at the civil hospital in Oran, where about 300 casualties, including survivors of the ill-fated H plus 2 attempt to land troops in the harbor, had been turned over by the French authorities. Personnel of the 77th Evacuation assumed responsibility for the operation of the Oran hospital on 12 November. The surgical teams of the 38th rejoined their parent unit the following day when it opened under canvas at St. Cloud.

Responsibility for evacuation was taken over by the 51st Medical Battalion, which had arrived with the 77th Evacuation on the D plus 3 convoy. Up to that time there had been very little evacuation from the combat zone because of the blocked harbor and the delay in arrival of hospital ships.

In keeping with the longer and more determined French resistance, combat casualties of the Center Task Force were considerably higher than those in the Algiers area. Of the 620 U.S. patients hospitalized during the week ending 14 November, 456 had combat wounds, 51 had injuries, and 113 were disease cases.[8]

Western Task Force

The Western Task Force made three separate landings along more than 200 miles of the Atlantic coast on both sides of Casablanca, at Safi, Fedala, and Port-Lyautey. These landings encountered the most determined opposition of any of the three task forces. Subtask Force BLACKSTONE, commanded by Maj. Gen. Ernest N. Harmon of the 2d Armored Division and built around the 47th Regimental Combat Team, 9th Division, and two battalion landing teams of the 2d Armored, touched shore at Safi, 140 miles south of Casablanca, about 0445, 8 November. The first waves met only intermittent small arms fire, but the French had been alerted by the earlier landings inside the Mediterranean.[9]

When the destroyer USS *Bernadou* slipped into Safi harbor with a battalion landing team of the 47th Infantry aboard, she met raking cross fire. USS *Bernadou* replied successfully and managed to land the men, who quickly swarmed into the town. The destroyer USS *Cole* followed with more combat troops, but by this time coastal guns from a nearby fort were sweeping the transport area. The battleship USS *New York* replied, and the guns were silenced. The beachhead

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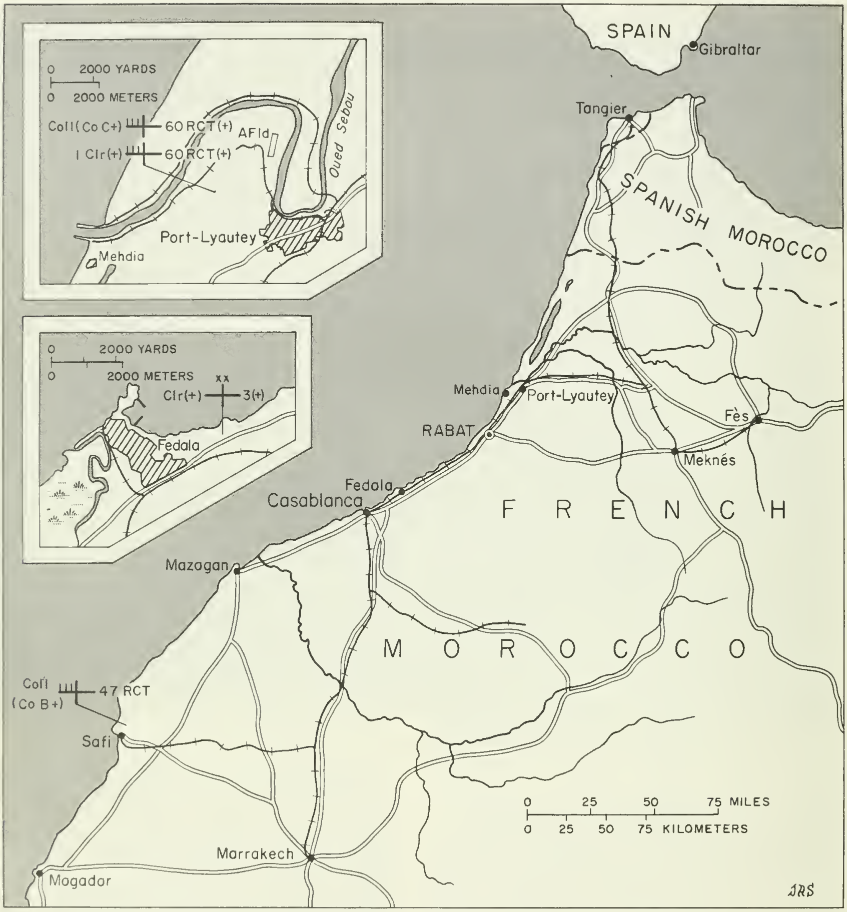
[8] Rpt, Hq SOS ETO, Office of the Chief Surg, 15 Feb 43. See also n. 5, p. 111, above.

[9] Principal sources for the combat history of the Western Task Force are: (1) Opns Rpt, Western Task Force; (2) Howe, *Northwest Africa;* (3) Morison, *North African Waters;* (4) George S. Patton, Jr., *War As I Knew It* (Boston: Houghton Mifflin Company, 1947), pp. 5–14; (5) Truscott, *Command Missions;* (6) E. A. Trahan, ed., *A History of the Second United States Armored Division, 1940–1946* (Atlanta: Albert Love Enterprises, 1946), pp. 31–45; (7) Donald G. Taggart, ed., *History of the Third Infantry Division in World War II* (Washington: Infantry Journal Press, 1947). Medical sources primarily relied upon are: (8) Clift, Field Opns, pp. 21–39; (9) Albert W. Kenner, "Medical Service in the North African Campaign," Bulletin, *U.S. Army Medical Department* (May, June 1944); (10) Hist of the 9th Med Bn 1942; (11) Annual Rpt, 3d Med Bn, 1942; (12) Med Hist Data, 56th Med Bn, 31 Oct 44.


0 2000 YARDS
0 2000 METERS
Co I I (Co C+)
60 RCT (+)
I Clr (+)
60 RCT (+)
AFld
Oued Sebou
Port-Lyautey
Mehdia
0 2000 YARDS
0 2000 METERS
XX
Clr (+)
3 (+)
Fedala
SPAIN
Gibraltar
Tangier
SPANISH MOROCCO
Mehdia
Port-Lyautey
RABAT
Fès
Meknés
Fedala
Casablanca
FRENCH
MOROCCO
Mazagan
Co I
(Co B+)
47 RCT
Safi
Marrakech
Mogador
0 25 50 75 MILES
0 25 50 75 KILOMETERS
JRS

Map 8—Medical Support of Western Task Force

and harbor area were sufficiently secure by midmorning to bring tanks ashore, and the town surrendered at 1530, about eleven hours after the action had started.

French planes from Marrakech came over Safi in the early morning of D plus 1, but heavy fog kept all but one plane from dropping bombs. The one plane destroyed an ammunition dump, with considerable damage to port installations. Allied carrier-based planes neutralized the Marrakech field that afternoon and broke up a truck convoy carrying French reinforcements to Safi. Tanks of Combat Command B, 2d Armored Division, which had landed during the night of 8–9 November were immediately dispatched to engage the French column. There was sharp fighting in the vicinity of Bou Guedra in the late afternoon of 9 November and early the next morning. After dark on the 10th the tanks withdrew and started for Casablanca, where they were sorely needed.

The largest of the three subtask forces—BRUSHWOOD—landed at Fedala, about fifteen miles north of Casablanca. (*Map 8*) The force consisted of the 3d Infantry Division, reinforced by a battalion landing team of the 2d Armored Division and was commanded by Maj. Gen. Jonathan W. Anderson of the 3d Division. Fedala lies on the southern edge of a shallow bay, enclosed by Cap de Fedala jutting out behind the town and the Cherqui headland about three miles to the northeast. The landing beaches actually used were all inside the bay, and all within range of batteries on cape or headland. Fortunately, the defenders were taken by surprise. Despite inexpert handling of landing craft that took several waves of assault troops to beaches miles north of the objective and piled many of the small boats onto rocks, there were 3,500 troops ashore before dawn brought organized French resistance. All initial objectives were quickly seized and the beachhead was secure by sunrise.

The batteries were silenced later in the day, and BRUSHWOOD Force began to move inland, swinging south toward Casablanca. The movement was hampered by delays in unloading transport and communications equipment, and supporting weapons, as well as by French resistance, but the force was poised in the outskirts of Casablanca by midnight of 10–11 November. In the interval, French warships at Casablanca, including the battleship *Jean Bart,* had joined the fight, inflicting considerable damage on the supporting naval units before being blockaded in the harbor. The final attack on Casablanca had still not been launched when word arrived that the French were willing to lay down their arms.

Most vigorously contested of all the Western Task Force landings were those of Subtask Force GOALPOST in the Mehdia–Port-Lyautey area, commanded by Maj. Gen. Lucian K. Truscott, Jr. *(See Map 8.)* GOALPOST's primary mission was to seize an airfield where P–40's, brought on the carrier USS *Chenango,* could be based to aid in the assault on Casablanca some 75 miles to the southwest. The airfield lay in a bend of the Sebou River, with the town of Port-Lyautey south of it, on another and sharper bend. The airfield was about 3.5 miles inland, or twice that far up the winding river, with the town another 3 or 4 miles upstream, but about equidistant from the coast as the crow flies. The village of Mehdia was just above the mouth of the river, which was closed beyond that point by a boom.

The landing force consisted of the 60th RCT of the 9th Division and a light tank battalion of the 66th Armored Regiment, 2d Armored Division, with supporting units that included nearly 2,000 ground troops of the XII Air Support Command. Landings on both sides of the river mouth were marred when a number of boat crews missed their beaches, landed the men as much as five miles out of position, and lost many boats in the

Hoisting Wounded Soldier Onto a Transport *for medical care, 8 November.*

surf. French authorities, moreover, had been alerted, like those at Safi, by the President's broadcast and by news of the actions already in progress at Oran and Algiers.

Coastal batteries opened up after the first wave reached shore, and French planes strafed the beaches at dawn. Ground opposition increased as the day advanced, and darkness found only the 3d Battalion of the 60th RCT more than a mile inland, opposite the airfield but north of the river. Units landing south of the river converged toward the airfield the following day and one company of the 3d Battalion crossed the Sebou in rubber boats, but all units were stopped short of their objectives.

The airfield was taken early on 10 November when the destroyer USS *Dallas* rammed the boom and carried a raiding party up the river to take the defenders of the field from the unprotected flank. About 1030, planes from the USS *Chenango* began landing at the field. There was little fighting the rest of that day, and French resistance was formally ended at 0400 on D plus 3.

For medical support the Safi force, in addition to attached personnel, was accompanied by a collecting company of the 9th Medical Battalion and a detachment of the 56th Medical Battalion consisting of two officers and sixty-nine enlisted men. During the first hours, casualties were held at aid stations for which sand dunes furnished the only cover. Early capture of the waterfront area made it possible to establish aid and collecting stations in a warehouse on the dock about H plus 8. From this point, casualties were evacuated for temporary hospitalization aboard the USAT *Titania.* Two days after the assault began, an improvised hospital staffed by medical battalion personnel was in operation in a school building with equipment borrowed from local doctors and merchants and from the Navy. Patients to be retained in the theater under a 30-day evacuation policy were brought to this provisional hospital from as far away as Port-Lyautey.

The 3d Division and its reinforcing armored battalion at Fedala were supported by the organic 3d Medical Battalion and by a detachment of the 56th Medical Battalion similar in size and composition to the detachment with the Safi force. Like the combat troops, medical soldiers were scattered by poor navigation of the landing craft. Units experienced considerable delay in making contact with their headquarters, as well as in the matter of receiving supplies. Evacuation was also a slow and uncertain process until medical units were assembled and vehicles were made available, and the wounded were held at battalion aid stations for twenty-four and sometimes thirty-six hours. A clearing station was set up by the afternoon of D-day in a beach casino at Fedala with capacity for 150 litter cases, the overflow being cared for in school buildings and private homes. Additional supplies were borrowed from the Navy. During the night of 12 November the station cared for survivors of a U-boat attack, including over 400 burn cases, 100 of them so severe as to require repeated transfusions. Flashlights furnished the only illumination until floodlights could be borrowed from Ordnance repair units. All available medical officers, including Colonel Kenner himself and Lt. Cols. Huston J. Banton and Clement F. St. John of the headquarters staff, worked through the night at the clearing station. Supplies and personnel were inadequate, and many of the more severe cases were lost.[10]

The Mehdia landings were supported by a collecting company and a clearing platoon of the 9th Medical Battalion and a detachment of the 56th Medical Battalion. The medical force was about half the size of those with the other two subtask forces. Throughout the three days of fighting it was possible to do no more than set up beach aid stations. Evacuation by land was out of the question for want of vehicles and a place to go; evacuation to the transports was hazardous and at times impossible because of heavy seas and the excessive loss of landing craft in the assault. On 12 November, after the armistice, the clearing platoon took over a Red Cross hospital in Mehdia, which was operated as an evacuation hospital until the regular installations arrived nearly a month later.

For the Western Task Force as a whole, 694 cases were hospitalized during the first week of the invasion. Of these, 603 were combat wounds, 43 injuries, and 48 disease.[11]

Hospitalization and Evacuation of Task Force Casualties

Hospitalization and evacuation of task force casualties remained the responsibility of the force surgeons until the medical section of Allied Force Headquarters was established in Africa and base section organizations were set up. For the Western Task Force the provisional hospitals at Safi and Mehdia continued to operate as long as they were needed. The Safi hospital was still in operation when the Atlantic Base Section was activated late in December. The first U.S. Army hospitals to reach western Morocco were the 750-bed 8th and the 400-bed 11th Evacuation Hospitals, which arrived at Casablanca together on 18 November on the delayed second convoy. The 8th opened three days later in buildings of the Italian consulate, which soon proved too small and inadequately equipped. The 11th moved on to Rabat, where it opened on 8 December, permitting return of the Mehdia Red Cross hospital to civilian control. The 59th Evacuation, another 750-bed unit, began receiving patients under canvas at Casablanca on 30 December. The 400-bed 91st Evacuation was also in the area before the end of the year, but was not established under task force control. All of these evacuation hospitals functioned as fixed installations rather than as mobile units.[12]

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[10] (1) Memo, Brig Gen Arthur R. Wilson for A/S, 12 Dec 42, sub: Rpt of Opns in N. Africa. (2) Ltr, Brig Gen Clement F. St. John to Col Coates, 28 Oct 58, commenting on preliminary draft of this volume.

[11] Rpt, Hq SOS ETO, Off of Chief Surg, 15 Feb 43. See also n. 5, p. 111, above.

In the Oran area the three mobile hospitals that came in with the combat troops—the 48th Surgical and the 38th and 77th Evacuation—were supplemented on 21 November by the 9th Evacuation, with an additional 750 beds, and by the 1st Battalion, 16th Medical Regiment. Since all of its equipment was lost at sea, the medical battalion operated a staging area for other units until February 1943. The Mediterranean Base Section was activated on 8 December, and fixed hospitals under base section control quickly supplanted the mobile units of the Center Task Force, which began staging for the next phase of the North African campaign.

Aside from the clearing platoons of the 9th and 109th Medical Battalions, all hospitalization for the Eastern Task Force was British. Although they were not able to land on D-day as planned, the 1st and 8th Casualty Clearing Stations were established promptly after the surrender of the city and, together with the provisional casualty clearing station being operated by the 159th Field Ambulance and the clearing platoon of the 109th Medical Battalion, were able to care for all casualties until a sufficient number of general hospital beds was established between 15 and 20 November. All British units took U.S. patients, but the bulk of them went to the 94th General, largest and best equipped of the British hospitals assigned to the Eastern Task Force.[13]

Evacuation from the Western Task Force was by troop transport to the United States. From the Center and Eastern Task Forces, evacuation was by British hospital ship to the United Kingdom. There was very little of either, however, before the period of task force control ended.

Evaluation of TORCH Medical Service

From the medical point of view, Operation TORCH was relatively easy only because casualties were far lower than had been anticipated and because medical officers and enlisted men of the Medical Department met unexpected situations with ingenuity and skill. In no instance did the collecting or clearing elements get ashore early enough, or have enough equipment with them. Supplies hand-carried by medical personnel accompanying the assault waves included some unnecessary items and omitted other items that would have been useful. Additional medical supplies were scattered over the beaches, where quantities were lost. Ambulances, in particular, were unloaded far too slowly, and when they finally became available they proved to have poor traction in sand and a dangerously high silhouette. The jeep, on the other hand, was found to be readily adaptable for carrying litters over difficult terrain.[14]

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[12] Unit reports of hospitals and base sections mentioned in the text.

[13] (1) Diary, Surg Teams 1 and 2, Ortho Team 1, Shock Team 1, 2d Aux Surg Gp, in Rpts of Prof Activities of Surg Teams, vol. I. (2) Crew, *Army Medical Services: Campaigns,* pp. 90–93.

[14] (1) Kenner, "Medical Service in the North African Campaign," Bulletin, *U.S. Army Medical Department* (May, June 1944). (2) Annual Rpt,

Hospital facilities provided for the Western Task Force aboard the transports proved unusable except in a single instance because of the heavy surf and the heavy loss of landing craft during the assault. Mobile hospitals provided for the Center Task Force were adequate as to bed strength, but the unloading of equipment was not co-ordinated with the debarkation of personnel. Hospital equipment, moreover, often proved to be incomplete when unpacked.[15] The Center and Western forces found it impossible to obtain records of casualties evacuated by naval beach parties, or even to learn how many there were.

Both the planning and the execution of the operation were at fault. Those who drew the medical plans in Washington and London had very little communication with each other, had only meager intelligence reports as to the conditions they would actually meet, and were for the most part either without combat experience on which to base their judgments or had experience limited to the static warfare of World War I. Medical personnel with the assault troops were equally inexperienced and at least equally ignorant of what war in North Africa would be like.

Medical Support of II Corps in the Tunisia Campaign

Expansion Into Tunisia

Armistice negotiations were still going on in Algiers and fighting still raged at Casablanca and Oran when the Eastern Task Force resumed its identity as the British First Army and turned toward Tunisia. The French commander there was unwilling or unable to obey Darlan's cease-fire order, and Axis reinforcements were coming in through the ports and airfields of Tunis and Bizerte. First Army units occupied Bougie, 100 miles east of Algiers, on 11 November. The following day British paratroops and a seaborne commando group took Bône, 150 miles farther east, unopposed. Advance elements were within 60 miles of Tunis before encountering German patrols on 16 November. With French co-operation, forward airfields were occupied in the Tébessa area, just west of the Tunisian frontier and 100 miles south of the coast. Medjez el Bab was captured on 25 November. The airfields at Djedeida, a bare 15 miles from Tunis, were occupied three days later, but could not be held against strong counterattacks.[16]

Surg, II Corps, 1942. (3) Recommendations of Surg, Western Task Force, 24 Dec 42, in Med Annex to Final Rpt of Opns.

[15] "Equipment was packed and shipped with the notation on the packing case, 'Complete except for the following items.' The 'following items' were pieces of equipment that would deteriorate in storage—particularly rubber items. These should have been included before shipment as pieces of equipment—notably anaesthesia machines—could not be used until the missing items had been received from the U.S. It took many months to make up these deficiencies." Ltr, Col Bauchspies to Col Coates, 15 Apr 59, commenting on preliminary draft of this volume. Colonel Bauchspies was commanding officer of the 38th Evacuation Hospital in the North African invasion.

[16] Military sources for the first phase of the Tunisia Campaign are: (1) Field Marshal the Viscount Alexander of Tunis, "The African Campaign from El Alamein to Tunis," Supplement to the *London Gazette*, 5 February 1948, pp. 864–66; (2) Howe, *Northwest Africa;* (3) Howe, *1st Armored Division;* (4) Craven and Cate, eds., *Europe: TORCH to POINTBLANK;* (5) Albert Kesselring, *Kesselring: A Soldier's Record* (New York: William Morrow and Company, 1954). The more important medical sources are: (6) Crew, *Army Medical Services: Campaigns;* (7) Clift, Field

By early December General Anderson's troops were exhausted and his supplies critically short. Before a direct attack on Tunis could be mounted the winter rains set in, and the campaign bogged down in mud. After a month of futility, during which the enemy achieved superior build-up by virtue of his larger ports, all-weather airfields, and shorter supply lines, the front was stabilized from Medjez el Bab in the north to Gafsa in the south. The First Army dug in to wait.

The first phase of the Tunisia Campaign began in mid-November with the piecemeal commitment of American troops in support of the British First Army. It ended with the concentration of II Corps in the Constantine-Tébessa area during early January 1943 in preparation for a large-scale offensive. Immediately after the armistice elements of the 34th Division that had participated in the Algiers landings relieved British units occupying Bougie and Djidjelli. The 39th Regimental Combat Team, 9th Division, was detailed to guard the line of communications from Algiers to the rapidly advancing front. Elements of the 9th Medical Battalion that had landed with the 39th RCT operated an ambulance service and a clearing station in Baba Hassen, some twelve miles southwest of Algiers. The four teams of the 2d Auxiliary Surgical Group that had been part of the Eastern Task Force continued to function in British hospitals and other medical installations close to the front.

As rapidly as the situation permitted, elements of II Corps that had made up the Center Task Force were also deployed to eastern Algeria and Tunisia. Combat Command B of the 1st Armored Division was at the front in time to participate in the long seesaw battle for Medjez el Bab that began around the first of December. The 2d Battalion, 509th Parachute Infantry, flown out from Oran, was operating in the Gafsa area in conjunction with Twelfth Air Force units and French ground troops. Before the end of December elements of the 1st Division were also in action in the Medjez el Bab sector. In addition to attached medical personnel, Company B of the 47th Armored Medical Battalion was in Tunisia in support of units of the 1st Armored Division. The 2d Battalion of the 16th Medical Regiment which had landed at Oran on 8 December, reached the front shortly before Christmas on detached service with First Army.[17] In this early phase of the campaign the U.S. forces fought in relatively small units, with supporting medical detachments correspondingly divided.

Hospitalization and evacuation in the British First Army area were exclusively British responsibilities. As the first phase of the Tunisia Campaign came to a close in muddy stalemate, there were approximately 250,000 Allied troops under First Army control, for which 11,000 beds in

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Opns, pp. 62–68; (8) Hist, 47th Armed Med Bn, 1 Oct 42–9 May 43; (9) Opns Rpt, 1st Med Bn, 11 Nov 42–14 Apr 43; (10) Rpt, Brig Gen Albert W. Kenner to CinC, AFHQ, 7 Jan 43, sub: Inspection of Med Troops and Installations, First Army Area; (11) Rpt, Brig Gen Howard McC. Snyder to IG, 8 Feb 43, sub: Inspection of Medical Service, Eastern Sector, Western Theater of North Africa.

[17] The 16th Medical Regiment was reorganized immediately upon landing in Africa into two composite battalions, which functioned independently in essentially the same manner as the separate medical battalions. Ltr, Brig Gen Frederick A. Blesse (Ret) to Col J. H. McNinch, 4 Apr 50, commenting on MS draft of Crew, *Army Medical Services: Campaigns*.

British military hospitals were available. Although the bed ratio was thus only 4.4 percent, no serious overcrowding was observed. Mobile units were close to the front lines and treatment was prompt. The Western Task Force surgeon, A. W. Kenner, who had been promoted to brigadier general and assigned to AFHQ as medical inspector, visited the front between 27 December and 4 January and concluded that American casualties were receiving the best medical care possible under the circumstances. He noted, however, that British hospitals were often lax in forwarding records of U.S. patients, so that commanders lost track of their men and returns to duty were unnecessarily slow; and that morale was impaired by absence of mail from home and failure to receive pay, though British wounded in the same hospitals received both. Other adverse morale factors were failure to receive the Purple Heart and the loss of personal toilet articles.

A month later Brig. Gen. (later Maj. Gen.) Howard McC. Snyder made similar observations, noting also that forward hospitals were unheated, lacking in all but the barest essentials in equipment, and understaffed by American standards. Nevertheless, he found treatment to be of a high order. While some installations had few patients, others were overburdened, resulting in a highly flexible evacuation policy. In some instances patients who could have been quickly returned to duty were sent to the rear simply to make room for new casualties. In others, men who should have been evacuated were held near the front because fixed beds were not available for them in the still rudimentary communications zone.

Evacuation was by ambulance from aid stations and other forward installations to railheads at Souk el Khemis, where a clearing platoon of the 2d Battalion, 16th Medical Regiment, shared the load with a British casualty clearing station, and at Souk Ahras, where facilities included a casualty clearing station and a 200-bed British general hospital. Michelin cars with capacity for 14 litter cases ran over the narrow-gauge line from Souk el Khemis to Souk Ahras; from there three British hospital trains made the 24-hour run to Algiers. Hospital trains were not yet available for evacuation west of that city.

In the Tébessa sector a British casualty clearing station and a small dispensary operated by the Twelfth Air Force furnished hospitalization. Both installations were at Youks-les-Bains, a few miles west of Tébessa and adjacent to a large airfield. Evacuation was by air, but was not formally organized. Up to early January, most of the casualties flown out were Air Forces personnel.

The Kasserine Withdrawal

At the turn of the year, U.S. units operating with the British First Army, together with forces from the Casablanca and Oran areas, were transferred to II Corps under General Fredendall, and various changes were made in the overall command structure. General Clark was detached from Allied Force Headquarters to train the newly activated U.S. Fifth Army for future operations in the Mediterranean. He was succeeded as Deputy Supreme Commander in North Africa by General Sir Harold R. L. G. Alexander. Lt. Gen. Sir Bernard L. Montgomery's British Eighth Army, fighting its way through Libya, was to come under General Eisenhower's command when it reached the Tunisian border. A new 18 Army Group was then to come into being, made up of the British First and Eighth Armies, the U.S. II Corps, and the French 19th Corps under General Louis-Marie Koeltz. General Alexander was to be the army group commander.

Early in January General Fredendall established II Corps headquarters at Constantine and began moving his forces into the vicinity of Tébessa. Additional elements of the 1st Armored and 34th Infantry Divisions, as they arrived from England, were sent to the II Corps sector, while all remaining elements of the 1st Division were brought up from Oran. The three divisions were substantially assembled by 1 February, with the scattered regiments of the 9th Division being moved into position as reserves. Medical units based around Tébessa included, in addition to attached medical personnel, the 1st and 109th Medical Battalions and the 47th Armored Medical Battalion, organic to the combat divisions; the 51st Medical Battalion; the 2d Battalion, 16th Medical Regiment; the 1st Advance Section of the 2d Medical Supply Depot; the 48th Surgical Hospital; and the 9th and 77th Evacuation Hospitals.[18]

The Germans seized the initiative when the rainy season ended in February. Early in the month Generaloberst Juergen von Arnim's army in Tunisia was joined by Field Marshal Rommel's famed *Afrika Korps,* and Rommel himself was in command when the Axis forces attacked savagely toward Faïd Pass in the center of the II Corps front on the 14th. Intelligence expected the attack farther north, and the Americans were caught off balance. Fredendall prepared to stand at Kasserine Pass, some forty miles west of the breakthrough, but his armor was out of position and poor weather conditions prevented air support or even reconnaissance. Enemy tank columns forced the pass on 20 February and debouched onto the plain beyond in a three-pronged drive that reached its maximum extent, only twenty miles from Tébessa, two days later. There the drive was contained. The Germans, running low on fuel and ammunition, realized they had not the strength to break through the Allied lines in the face of reinforcements moving in from Le Kef and Tébessa, and withdrew to their original positions.

Before the Faïd breakthrough there had been relatively heavy fighting in the

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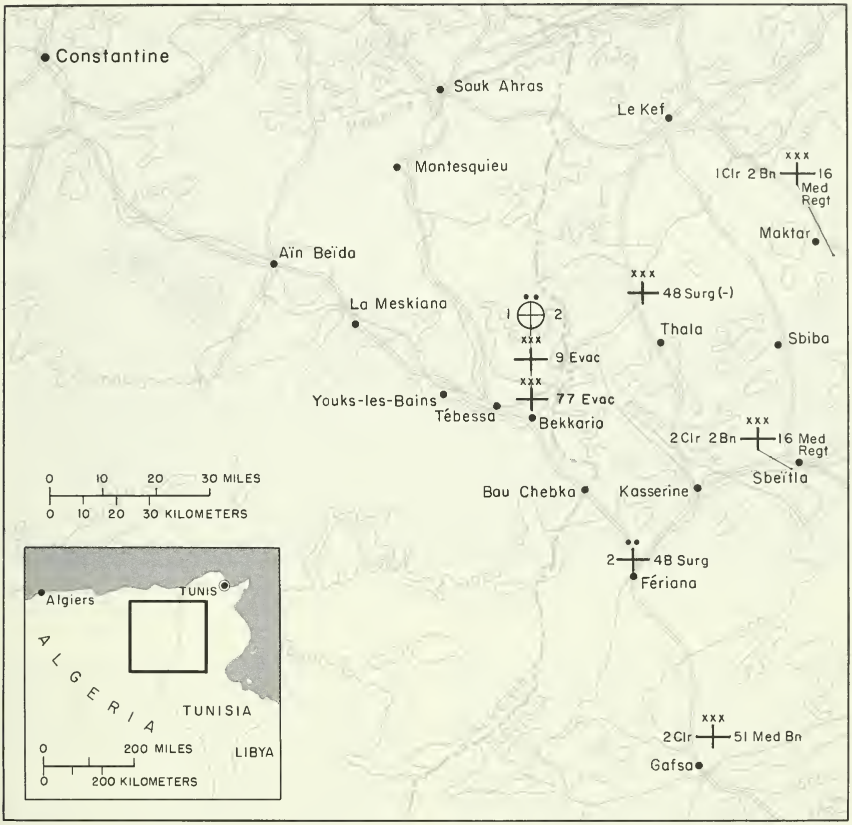
[18] Military sources for the Kasserine phase of the Tunisia Campaign are: (1) Howe, *Northwest Africa;* (2) Opns Rpt, II Corps, 1 Jan–15 Mar 43; (3) Truscott, *Command Missions;* (4) Howe, *1st Armored Division;* (5) Knickerbocker and others, *Story of First Division in World War II,* pp. 58–64, 81–92; (6) Craven and Cate, eds., *Europe: TORCH to POINTBLANK;* (7) Eisenhower, *Crusade in Europe,* pp. 140–48; (8) Kesselring, *Soldier's Record,* pp. 177–84; (9) Alexander, "African Campaign," Suppl to *London Gazette,* 5 February 1948, pp. 866–73. Medical sources primarily relied upon are: (10) Annual Rpt, Surg, II Corps, 1943; (11) Annual Rpt, Med Sec, NATOUSA, 1943; (12) Annual Rpt, 51st Med Bn, 1943; (13) Annual Rpt, Surg, 1st Armd Div, 1943; (14) Annual Rpt, Surg, 1st Div, 1943; (15) Annual Rpt, Surg, 34th Div, 1943; (16) Annual Rpt, Surg, 9th Div, 1943; (17) Hist, 47th Armd Med Bn, 1 Oct 42–9 May 43; (18) Opns Rpt, 1st Med Bn, 11 Nov 42–12 May 43; (19) Hist, 9th Med Bn, 1943; (20) Diary, Hq Detach, 109th Med Bn, 1 Feb–1 Mar 43; (21) Cowell, Kenner, Rpts of Visit to II Corps, 29 Jan–2 Feb 43; (22) Unsigned Rpt of Observations of Visit to II Corps, 13–19 Feb 43; (23) Annual Rpt, 9th Evac Hosp, 1943; (24) Annual Rpt, 77th Evac Hosp, 1943; (25) Annual Rpt, 128th Evac Hosp (48th Surg Hosp), 1943; (26) Annual Rpt, 2d Aux Surg Gp, 1943; (27) Clift, Field Opns, pp. 74–94.


Constantine
Souk Ahras
Le Kef
Montesquieu
1Clr 2Bn
16 Med Regt
Maktar
Aïn Beïda
48 Surg (-)
La Meskiana
1
2
Thala
Sbiba
9 Evac
Youks-les-Bains
77 Evac
Tébessa
Bekkaria
2Clr 2Bn
16 Med Regt
Sbeïtla
Bou Chebka
Kasserine
0 10 20 30 MILES
0 10 20 30 KILOMETERS
2
48 Surg
Fériana
Algiers
TUNIS
ALGERIA
TUNISIA
LIBYA
0 200 MILES
0 200 KILOMETERS
2Clr
51 Med Bn
Gafsa

MAP 9—II Corps Medical Installations, 14 February 1943

Ousseltia Valley, where the II Corps sector approached British positions in the north, and around Gafsa, more than a hundred miles distant on the southern flank. These actions had served to disperse collecting and clearing companies over hundreds of miles of rough and largely roadless country. The 9th and 77th Evacuation Hospitals were about ten miles southeast of Tébessa, far to the rear, while the 48th Surgical was operating one 200-bed unit at Thala and the other at Fériana, each more than fifty miles from the combat lines as of 14 February. *(Map 9)*

A general withdrawal of medical in-

CAMOUFLAGED AID STATION *of a fighter squadron at Youks-les-Bains, Algeria, January 1943.*

stallations paralleled the mid-February German advance. On the first day of the advance an entire collecting company of the 109th Medical Battalion was captured, together with most of the medical detachment of the 168th Infantry regiment–in all, 10 medical officers and more than 100 enlisted men. On the same day, 14 February, an officer of the 47th Armored Medical Battalion was captured with four ambulances loaded with casualties.[19] Aid stations in both Faïd and Gafsa sectors were hastily leapfrogged to the rear, one section caring for patients while another moved to a safer location. Lines of evacuation were long and circuitous, over roads that could be safely traveled only at night. Trucks and litter-jeeps were freely used to supplement the ambulances that were never available in sufficient numbers.

During the night of 14–15 February the Fériana section of the 48th Surgical Hospital moved to Bou Chebka about midway along the road to Tébessà, using trucks and ambulances of the corps medical battalions. Patients were placed in the 9th Evacuation Hospital, which shifted 107 of its own patients to beds set up for the purpose by the still inoperative 77th. By February 17th the 48th Surgical was on the road again, moving this time to Youks-les-Bains just west of Tébessa. Within six hours of arrival it was receiving patients from both evacuation hospitals, which were themselves in process of moving.

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[19] Interv with 1st Lt Abraham L. Batalion, and Capt Wilbur E. McKee.

When weather conditions made air evacuation to the communications zone impossible, a section of the British 6th Motor Ambulance Convoy was rushed to Youks, where it was placed at the disposal of the 48th Surgical Hospital on 18 February. The twenty-five ambulances and two buses of this unit were able to move 180 patients at a time, and succeeded in clearing the Tébessa area of casualties by the time the Germans broke through Kasserine Pass. Both the 9th and the 77th Evacuation Hospitals were back in operation by 20 February, at new sites in the Aïn Beïda—La Meskiana area on the road to Constantine. The Tébessa section of the 2d Medical Supply Depot moved into the same area on 19 February, followed by the Thala section of the 48th Surgical. The remainder of the 48th went from Youks to Montesquieu on 22 February, while the 9th Evacuation shifted from Aïn Beïda to Souk Ahras, fifty miles to the north. *(Map 10)*

All of these moves were carried out rapidly and in good order, although hundreds of patients were involved. In this acid test of mobility, commanders were duly impressed by the fact that a 200-bed section of the 48th Surgical Hospital could evacuate its patients, dismantle and load its installations, and be on the road in four and a half hours, while the 750-bed evacuation hospitals, because they had no organic vehicles of their own, were able to move only when transportation could be provided by corps. In a disintegrating situation their priority was low and the danger of their being overrun by the enemy was proportionately great. The relative immobility of these large units kept them so far behind the fighting fronts that ambulance runs of a hundred miles or more between clearing station and hospital were not infrequent. In the absence of hospitals closer to the lines, teams of the 2d Auxiliary Surgical Group were attached to the clearing stations.

Operations in Southern Tunisia

During the first week of March, General Fredendall was relieved, and command of II Corps was given to General Patton; Maj. Gen. Omar N. Bradley was appointed his deputy. The shift in leadership coincided with the penetration of Tunisia from the south by the British Eighth Army and activitation of the 18 Army Group under Alexander. The II Corps' next mission was to attack in the Gafsa-Maknassy area in support of Eighth Army's drive up the coast.[20]

Mindful of the Kasserine experience, and with troop strength brought up to 90,000 by assignment of the 9th Division, Colonel Arnest, the II Corps surgeon, asked for one of the new 400-bed field hospitals capable of operating in three 100-bed units, a 400-bed evacuation hospital, and more ambulances. Only the ambulances arrived before the southern phase of the Tunisia Campaign

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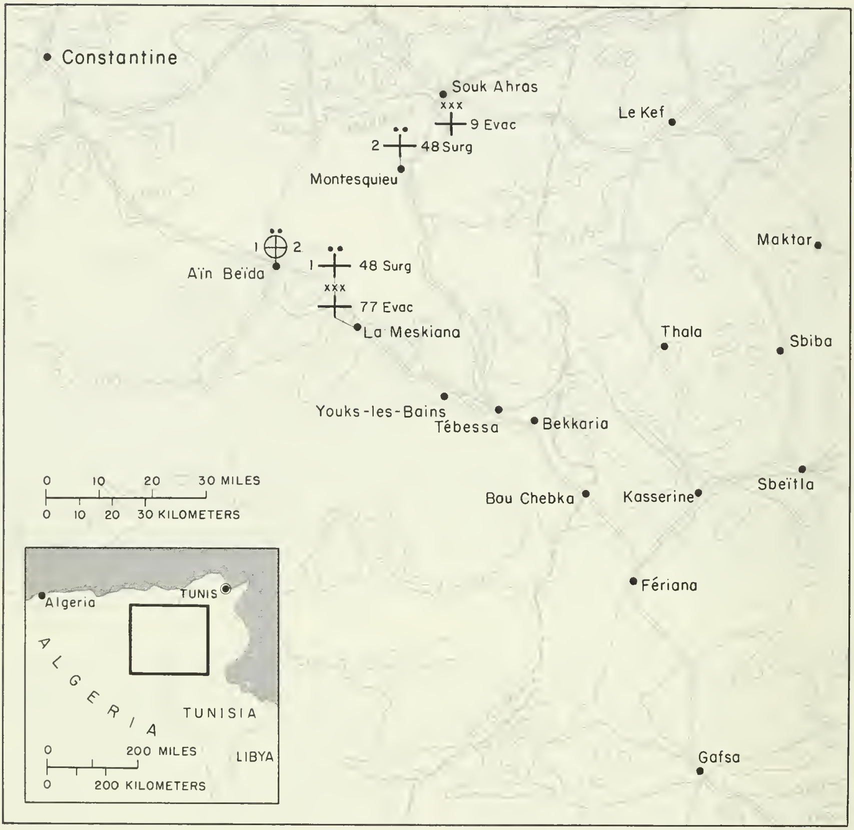
[20] Military sources for the campaign in southern Tunisia are: (1) Opns Rpt, II Corps, 16 Mar–10 Apr 43; (2) Howe, *Northwest Africa;* (3) Howe, *1st Armored Division;* (4) Knickerbocker and others, *Story of First Division in World War II,* pp. 64–72, 92–95; (5) Omar N. Bradley, *A Soldier's Story* (New York: Henry Holt and Company, 1951), pp. 43–55; (6) Kesselring, *Soldier's Record,* pp. 184–88; (7) Alexander, "African Campaign," Suppl to *London Gazette,* 5 February 1948, pp. 873–78. Medical sources are the same as those cited in n. 18, above, with the addition of: (8) Annual Rpt, 15th Evac Hosp, 1943; (9) Annual Rpt, 3d Aux Surg Gp, 1943; (10) Clift, Field Opns, pp. 98–112.


Constantine
Souk Ahras
9 Evac
2
48 Surg
Montesquieu
Le Kef
Maktar
1
2
Aïn Beïda
1
48 Surg
77 Evac
La Meskiana
Thala
Sbiba
Youks-les-Bains
Tébessa
Bekkaria
Bou Chebka
Kasserine
Sbeïtla
Fériana
Gafsa
0 10 20 30 MILES
0 10 20 30 KILOMETERS
Algeria
TUNIS
ALGERIA
TUNISIA
LIBYA
0 200 MILES
0 200 KILOMETERS

Map 10—II Corps Medical Installations, 24 February 1943

was over, and those only a few days before the pressing need for them had passed. The only medical reinforcements received were five teams of the 3d Auxiliary Surgical Group, flown in without nurses on 18 March. Eleven teams of the 2d Auxiliary Surgical Group were already active in the II Corps area. Shortage of beds made it impossible to maintain any fixed evacuation policy, even the 15-day policy originally planned.

The corps jumped off on 17 March. The 1st Division occupied Gafsa the same day, took El Guettar on the 18th, and seized Station de Sened on the 21st.

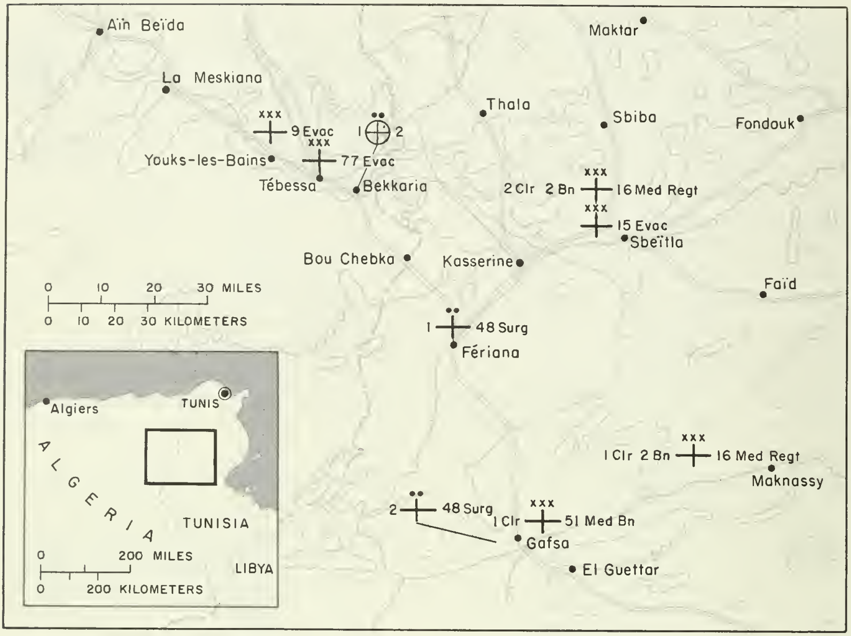
Maknassy fell to the 1st Armored on 22 March. After a brief respite for revision of plans and regrouping, all four divisions of II Corps went into action on 28 March. The 9th Division attacked along the road from El Guettar to the coastal city of Gabès; the 1st turned northeast toward Maknassy, where the 1st Armored was concentrating on a strongly held pass east of the town; and the 34th, together with British First Army units, attacked Fondouk on the left flank. Fighting in all sectors was heavy, and for ten days almost continuous. Contact with the British Eighth Army was established on 7 April, and the enemy began withdrawing to the north. When the 34th Division and its British allies broke through at Fondouk two days later, the southern campaign was over.

In the interval between recovery of the ground lost in the Kasserine withdrawal and the launching of the II Corps offensive, hospitals and other medical installations were again moved forward to the Tébessa area. The 9th Evacuation Hospital set up this time at Youks-les-Bains, where proximity to the field used for air evacuation to the communications zone was the primary consideration. Both sections of the 48th Surgical were back at Fériana by 19 March. Two corps clearing stations established on 22 March remained in place until the end of the southern campaign, compensating in part for the shortage of mobile hospital beds. These were the clearing stations of the 51st Medical Battalion at Gafsa and of the 2d Battalion, 16th Medical Regiment, near Maknassy. Each was reinforced by surgical teams and was adjacent to clearing units of the organic medical battalions. They functioned in effect as front-line hospitals for forward surgery and for holding cases that could not be safely moved. Evacuation from both stations was to the 48th Surgical Hospital, fifty miles from Gafsa and almost twice that far from Maknassy.

Coinciding with the renewal of the offensive on 28 March, the 77th Evacuation returned to Tébessa and one section of the 48th Surgical went on to Gafsa. At Sbeïtla, on the evacuation route from the 34th Division, 2d Battalion of the 16th Medical Regiment set up a clearing station that, like the other two corps clearing stations, functioned as a forward hospital. It was relieved on 11 April, after the southern campaign had ended, by the 400-bed 15th Evacuation Hospital.

Facilities of the 48th Surgical Hospital, and of the corps clearing stations, were wholly inadequate for the steady stream of casualties from the three divisions operating in the El Guettar–Maknassy sector during the final drive. Evacuation to Tébessa and Youks by ambulance and truck was virtually a continuous process. To make room for new arrivals, the 77th and 9th Evacuation Hospitals were compelled to send patients to the communications zone with little reference to their hospital expectancy, and many were thus lost who could have been returned to duty in a reasonable time.

In the El Guettar–Maknassy area, terrain was often too rough for vehicles, even for jeeps and half-track ambulances. Litter carries, especially on the 9th Division front, were long and generally possible only at night. In many instances both patients and medical attendants waited in slit trenches for darkness. The corps medical battalions supplied additional litter bearers, as many as 75 being needed by one combat team. Only in the


Aïn Beïda
La Meskiana
Maktar
Thala
Sbiba
Fondouk
9 Evac
1 2
Youks-les-Bains
77 Evac
Tébessa
Bekkaria
2 Clr 2 Bn
16 Med Regt
15 Evac
Sbeïtla
Bou Chebka
Kasserine
Faïd
0 10 20 30 MILES
0 10 20 30 KILOMETERS
1 48 Surg
Fériana
Algiers
TUNIS
ALGERIA
TUNISIA
0 200 MILES
0 200 KILOMETERS
LIBYA
1 Clr 2 Bn
16 Med Regt
Maknassy
2 48 Surg
1 Clr
51 Med Bn
Gafsa
El Guettar

MAP 11—II Corps Medical Installations, 11 April 1943

Fondouk sector was evacuation from the battlefield relatively easy. There, a good road net and adequate cover permitted location of aid and collecting stations close to the lines. The ambulance haul from the clearing station at Sbeïtla to the evacuation hospitals at Tébessa and Youks-les-Bains was approximately eighty miles. (*Map 11*)

The Drive to Bizerte

Following withdrawal of the enemy from southern Tunisia, General Patton was detached to train the force that would become the U.S. Seventh Army on the scheduled invasion of Sicily. Command of II Corps passed to General Bradley, whose first task was to shift his troops 150 miles to the north. Although the movement involved passing close to 100,000 men, with all their equipment, across the communication lines of the British First Army, it was accomplished without interruption to any supply or military service, and without detection by the enemy.[21]

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[21] Military sources for the northern phase of the Tunisia Campaign are: (1) Opns Rpt, II Corps, 23 Apr–9 May 43; (2) Howe, *Northwest Africa;* (3) Howe, *1st Armored Division;* (4) Knickerbocker and Others, *Story of First Division in World War II,* 72–81, 95–98; (5) Bradley, *Soldier's Story;* (6) Craven and Cate, eds., *Europe: TORCH to POINTBLANK;* (7) *To Bizerte with the II Corps*

SETTING UP A TENT OVER A MOBILE SURGICAL TRUCK IN TUNISIA. *Truck and tent furnished facilities and operating space for three surgical teams.*

The final phase of the North African campaign began on 23 April, with II Corps and attached French elements pushing east along the Mediterranean coast, First Army advancing northeast in the center, and Eighth Army attacking northward on the right flank. The French 19th Corps, under General Koeltz, operated between the two British armies. By this time the Allies had control of the air and the end was swift and sure. One after another, strongly held hill positions were stormed. The 1st Armored swept through the Tine Valley to capture the important communications city of Mateur on 3 May. Bizerte fell to the 9th Division on 7 May, simultaneously with the entry of British units into Tunis. The 3d Division was brought up at this time, but was too late to participate in more than mopping-up operations. All enemy forces in the II Corps sector surrendered on 9 May. British armor quickly closed the escape route to the Cap Bon peninsula, and the remaining Axis forces, trapped between the British First and Eighth Armies,

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(Washington, 1943); (8) Alexander, "African Campaign," Suppl to *London Gazette*, 5 February 1948, pp. 878–84. Medical sources are substantially the same as those already cited for the Kasserine and southern phases of the campaign, to which should be added: (1) Annual Rpt, 10th Field Hosp, 1943; (2) Clift, Field Opns.

surrendered on 13 May. About 275,000 prisoners were taken in the last week of the campaign.

With an independent combat mission and five divisions under its command by the date of the German surrender, II Corps resembled a field army both in size and role. Colonel Arnest functioned more as an army than as a corps surgeon. His staff of eleven officers and sixteen enlisted men was of a size appropriate to the responsibilities entailed.

In northern Tunisia, Tabarka served as the nerve center for medical activities, as Tébessa had in the south. The use and disposition of mobile hospitals was drastically modified on the basis of previous experience. The semimobile 400-bed evacuation hospitals, with surgical teams attached, were placed directly behind the advancing troops, with the larger evacuation units farther to the rear where they took patients from the more forward installations. Before the attack was launched, the 11th Evacuation was shifted more than a thousand miles from Rabat to a site nine miles south of Tabarka, and the 48th Surgical was established some ten miles farther to the east. The 750-bed 77th Evacuation was set up at Morris, near Bône, where it was detached from II Corps and assigned to the Eastern Base Section, the forward element of the North African Communications Zone.

On 21 April the 15th Evacuation moved up from Sbeïtla to a location ten miles north of Bédja, and the following day the 11th relieved the 48th Surgical, which closed for reorganization. The larger 9th Evacuation occupied the former site of the 11th. (*Map 12*) The 48th Surgical, converted into the 400-bed 128th Evacuation Hospital, returned to combat duty southwest of Mateur on 4 May. The 15th Evacuation, displaced by the 128th, moved two days later to a site west of Mateur.

The 750-bed 38th Evacuation Hospital moved from the Télergma airfield west of Constantine, where it had been operating as a communications zone unit since early March,[22] to the vicinity of Bédja on 4 May; and on 7 May the 9th Evacuation moved forward to the vicinity of Mateur. The 77th Evacuation remained throughout the campaign at Morris, where it possessed air, rail, and water outlets to the communications zone, though its usefulness was impaired by an ambulance run of 85 to 110 miles over roads too rough for the transportation of seriously wounded men.

In the northern phase of the campaign, II Corps was thus supported by three 400-bed and three 750-bed evacuation hospitals, in contrast to the campaign in the south where one 400-bed unit and two 750-bed units had served substantially the same troop strength. In the northern campaign, moreover, forward hospitals were only 5 to 20 miles from the combat areas, contrasted with distances of 25 to 100 miles in southern Tunisia. Despite these shortened lines of evacuation, the 2d Battalion of the 16th Medical Regiment and the 51st Medical Battalion were reinforced by elements of the 56th Medical Battalion and were given additional ambulances. The 10th Field Hospital, which reached Tabarka on 30 April, was also assigned to II Corps, but did not go into operation until 7 May, when it was used exclusively as a holding unit for air evacuation, and to serve personnel of an air base.

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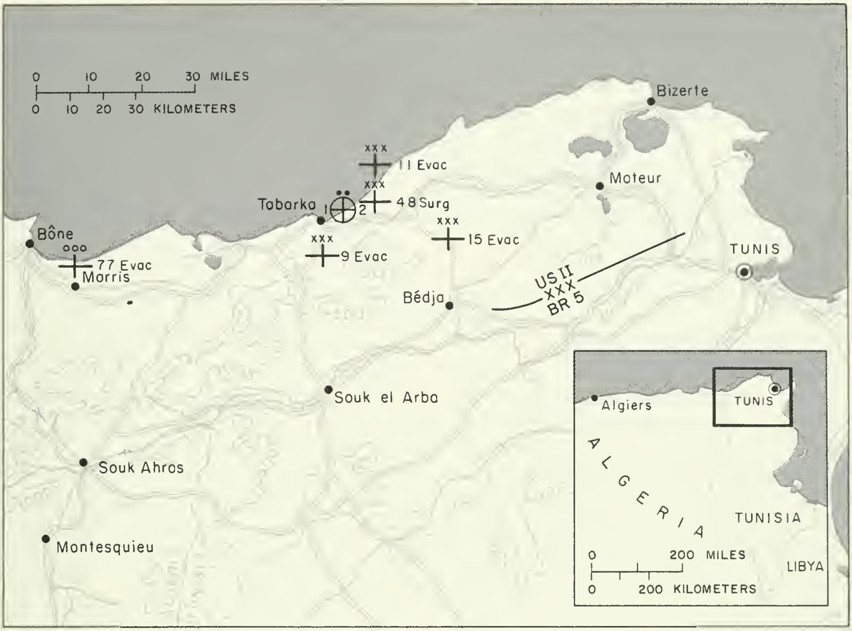
[22] See p. 190, below.


0 10 20 30 MILES
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Bizerte
Moteur
TUNIS
11 Evac
48 Surg
Tabarka
15 Evac
9 Evac
Bône
77 Evac
Morris
Bédja
US II
BR 5
Souk el Arba
Souk Ahros
Montesquieu
Algiers
ALGERIA
TUNISIA
LIBYA
0 200 MILES
0 200 KILOMETERS

MAP 12—II Corps Medical Installations, 23 April 1943

During the first ten days of the Bizerte drive, fighting was in mountainous country, often covered with thick, thorny underbrush and largely without roads. Evacuation was particularly difficult on the 9th Division front, to the left of the corps sector. For a time mules were used, harnessed in tandem with a litter swung between poles attached to the saddles. Difficult hand litter carries up to three and a half miles necessitated the use of 200 additional bearers, drawn in part from corps medical battalions but mainly from line troops. At one point, where a railroad cut the 9th Division front, two half-ton trucks were fastened back to back with rims fitted over the rails. One truck powered the vehicle on its way to the rear, the other on the return trip. Twelve litters could be carried at a time, but the exposed position of the railroad made it usable only at night. One collecting company of the 9th Medical Battalion operated a rest camp in the rear of the division area, to which approximately seventy-five front-line soldiers were brought each evening for a hot shower, a full night's sleep, and a chance to write letters. Exhaustion cases were held at the clearing stations, under heavy sedation.

Similar conditions prevailed on the narrower fronts assigned to the other divisions of II Corps. The 1st Division borrowed litter bearers from the 51st

Medical Battalion; the 1st Armored drafted cooks, clerks, and other noncombat personnel into service as bearers. Half-track ambulances proved unable to enter the narrow wadis where casualties occurred most frequently, and had to be replaced by jeeps. In the bloody battle for Hill 609, litter bearers of the 34th Division brought out casualties in daylight from positions closer to the enemy lines than to their own.

In the final week of the campaign, medical support of the combat forces more closely approximated the pattern laid down in the manuals. (*Map 13*) The coastal plain was adapted to easy movement in vehicles, and the road net was good. The 400-bed evacuation hospitals were closed to admissions between 9 and 15 May, new patients being sent thereafter only to the 9th Evacuation. The staff of this unit was reinforced by a detachment from the 16th Medical Regiment and by captured German medical personnel, who helped with prisoner-of-war patients. Two captured German field hospitals were allowed to continue in operation, under supervision of the 51st Medical Battalion, until 15 May, when all prisoners still requiring hospitalization were turned over to the 9th Evacuation. As of 12 May there were 1,145 patients, including prisioners of war, in II Corps hospitals, and twice that number in the two evacuation hospitals assigned to the Eastern Base Section. All hospital units and corps medical battalions passed to control of EBS as of midnight, 15 May.

Immediately after the end of hostilities the 9th Evacuation Hospital, on its own initiative, began to function as a station hospital for all troops in the area. Members of the hospital staff were soon treating 100 or more a day in the outpatient clinic, where their specialized skills made up for the limitations of battalion medical sections left with the combat and support troops in the vicinity.[23]

Summary of Tunisian Experience

Like the combat troops, the medical units and personnel of the medical detachments went into the Tunisia Campaign without battle experience, or with experience limited to the two or three days of action in the TORCH landings. Deficiencies in training had to be made up while operating under combat conditions, and in intervals when the units were in bivouac. More important still was the training of replacements. Virtually no trained medical replacements were available, yet losses were high. More than a hundred Medical Department officers and men were captured in the Faïd Pass breakthrough alone, while disease, injury, and battle wounds also took their toll. Indeed, the personnel problem was perhaps the most difficult one faced by the surgeon's office during the campaign. Constant juggling of medical officers, and continuing training of line troops as replacements, were necessary to keep the II Corps medical service in operation at all. Other difficulties included much obsolete equipment in the early stages of the campaign, and generally inadequate lighting and power facilities.

Casualties were progressively heavier

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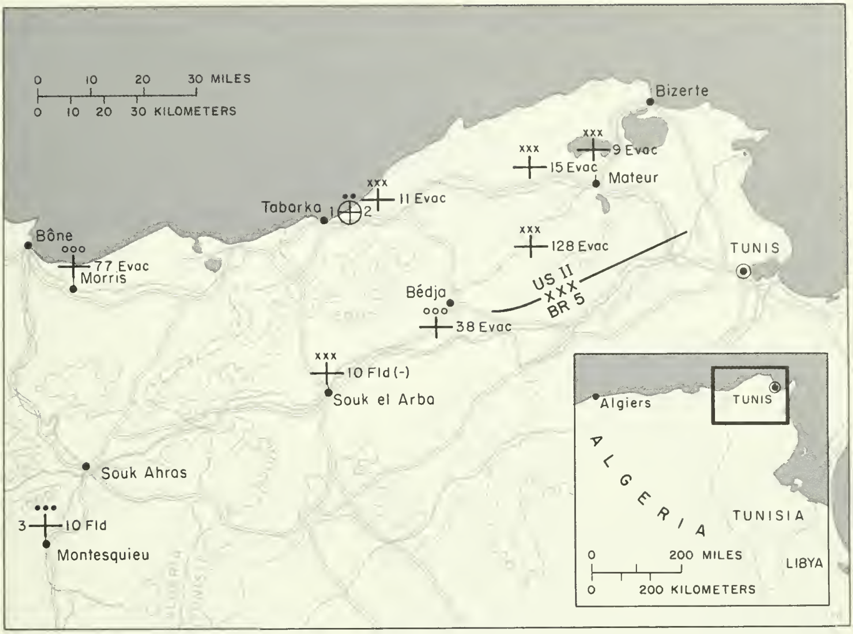
[23] Recorded interv, Col Coates, with ASD Frank B. Berry, 4 Nov 58, commenting on preliminary draft of this volume. Dr. Berry—then a colonel—was chief of the Surgical Service, 9th Evacuation Hospital, in North Africa.


0 10 20 30 MILES
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Bizerte
9 Evac
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Mateur
11 Evac
Tabarka
Bône
77 Evac
Morris
128 Evac
TUNIS
US II
BR 5
Bédja
38 Evac
10 Fld (-)
Souk el Arba
Souk Ahras
10 Fld
Montesquieu
Algiers
ALGERIA
TUNISIA
LIBYA
0 200 MILES
0 200 KILOMETERS

Map 13—II Corps Medical Installations, 12 May 1943

with each stage of the campaign. Hospital admissions for the period 1 January through 16 March were 4,689. During the campaign in southern Tunisia, 17 March through 9 April, 6,370 men were admitted to II Corps hospitals. For the northern campaign, 10 April through 15 May, there were 8,629 hospital admissions. The consolidated casualty figures, shown in Table 1, offer tangible evidence of the magnitude of the task successfully carried through by Colonel Arnest and his staff.

The early use of the 750-bed evacuation hospital as a forward unit was a holdover from the relatively static warfare of World War I, and was at least in part responsible for the siting of hospitals so far to the rear. Another reason for the failure of II Corps to give close hospital support in the Kasserine and southern phases of the campaign was the absence of any fixed battle line and the necessity of giving ground before an enemy superior both in numbers and in combat experience.[24]

The organization of the corps medical service underwent numerous changes as the campaign progressed and more experience was gained with the requirements of modern combat. Initially the corps surgeon's office was located at the

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[24] Ltr, Col Arnest to Col Coates, 10 Nov 58.

Table 1—Hospital Admissions and Dispositions, II Corps, 1 January–15 May 1943

	Disease	Injury	Wounded	Allied	Enemy	Total
Admissions	7,415	3,154	6,808	1,002	1,309	19,688
Dispositions	7,162	3,024	6,795	952	1,035	18,968
Returned to duty	2,920	863	690	190	157	4,820
Died	1	16	135	17	15	184
AWOL	38	6	9	....	....	53
Evacuated	4,203	2,139	5,961	745	863	13,911
Remaining in hospital	253	130	13	50	274	720

Source: Annual Rpt, Surg, II Corps, 1943.

corps rear echelon, where information filtered back too slowly to permit adequate advance planning. Delay in establishing a base section close to the combat zone complicated both supply and evacuation problems in the early stages of the campaign. The 61st Station Hospital, located at El Guerrah just south of Constantine early in February at the request of the British First Army surgeon and under British control until March, was the only U.S. fixed hospital closer than Algiers until the end of March. This 500-bed unit, and the British 12th Casualty Clearing Station at Youks-les-Bains, aided immeasurably in the orderly withdrawal of II Corps medical installations at the time of the Kasserine breakthrough. The contrast between the medical support available to the corps at that time and that available during the final phase of the campaign in late April and early May shows how quickly and how well the lesson of Kasserine Pass was learned.[25]

Air Force Medical Installations

In addition to the mobile hospitals serving II Corps in the field, the Twelfth Air Force maintained various installations of its own, which gave first- and second-echelon medical service to combat fliers, their counterparts in the Air Transport Command, and the supporting ground crews. Air Forces medical personnel were administratively distinct from the organization serving the ground forces, although the two groups worked closely together. Air Forces installations were confined to squadron aid stations and dispensaries, but both types of unit frequently had to assume hospital functions. At the more important airfields, such as Marrakech, La Sénia, and Télergma, hospitals were set up by the base sections, while combat zone airfields, such as Youks-les-Bains, generally had

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[25] (1) Ltr, Surg, II Corps, to TSG, 1 Jun 43, sub: Care of Wounded. (2) Ltr, Surg, NATOUSA, to TSG, 15 May 43, sub: Observations, North African Theater. (3) Clift, Field Opns, pp. 129–36. (4) Observations made on a visit to II Corps, 13–19 Feb 43. (5) Deputy Surg, AFHQ, to G–4, Orders, 61st Sta Hosp, 20 Jan 43; and attachment, DDMS, First Army, to Surg, AFHQ, 15 Jan 43. See also p. 189, below.

WRECKED AMBULANCE *in northern Tunisia. The red cross was not always respected.*

mobile hospital units of the ground forces in the immediate vicinity. Fixed hospitals in the communications zone served Air Forces personnel as well as ground troops.[26]

Evacuation From II Corps

The chain of evacuation from the Tunisian battlefields went from forward evacuation hospitals by ambulance and rail to Eastern Base Section installations, and by air direct to fixed hospitals in Algiers and in the vicinity of Oran. During the Kasserine and southern Tunisian campaigns, Tébessa and the nearby airfield at Youks-les-Bains served as the starting points for evacuation to the communications zone. In the final stages of the campaign, and the readjustment period immediately following the close of hostilities, evacuation was from Tabarka to Bône, from the railhead at Souk el Khemis to Constantine, and from airfields at Souk el Arba and Sidi Smaïl to Oran.

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[26] For description of Air Forces medical units, see Link and Coleman, *Medical Support of the Army Air Forces in World War II,* pp. 455–57.

Evacuation by Road and Rail

The 1st Battalion of the 16th Medical Regiment, with the assistance after 18 February of the British 6th Motor Ambulance Convoy, operated an ambulance shuttle from Tébessa to Constantine, approximately 140 miles. The same road served as a main supply route for II Corps. Beginning in mid-March, the 16th Medical Regiment also staffed and operated a French hospital train, which ran from Tébessa to Ouled Rahmoun, just south of Constantine, where the narrow-gauge Tébessa line intercepted the main east-west railroad. A traffic control post at Aïn M'lilla distributed patients from ambulance convoys and hospital trains to vacant beds in the area. In the northern sector the ambulance route of the 16th Medical Regiment ran eighty-five miles from Tabarka to Bône. Rail evacuation from the northern sector was by two British hospital trains from Souk el Khemis, each with capacity for 120 litter and 200 sitting patients.[27]

Evacuation from the combat zone by road and rail was under control of II Corps, although the 1st Battalion of the 16th Medical Regiment, which was primarily responsible for the operation, was assigned to the Eastern Base Section. For the Kasserine period, 1 January to 16 March 1943, the II Corps Surgeon reported 1,740 patients evacuated to the communications zone by road, none by rail. During the campaign in southern Tunisia, 17 March to 9 April, 1,742 patients were evacuated by road and 1,052 by rail. From the northern sector, 10 April to 15 May, the evacuation figures included 5,628 by road and 436 by rail.

Air Evacuation From II Corps

With the concentration of II Corps in the Tébessa area in January, it was immediately clear that the informal and infrequent use of air evacuation prevalent up to that time would be inadequate. The logistical demands upon the single-track, narrow-gauge rail line and the one motor road between Tébessa and Constantine would preclude the extensive use of either for evacuation, even had hospital cars and ambulances been available at that early stage of the campaign. In an effort to solve the evacuation problem, General Kenner and Colonel Corby met with General Doolittle and Colonel Elvins, respectively commanding officer and surgeon of the Twelfth Air Force, and the corresponding officers of the 51st Troop Carrier Wing in Algiers on 14 January.[28]

A comprehensive plan for air evacuation was agreed upon, and was put into effect without delay. It differed in fact but little from the plan Colonel Elvins had prepared before the invasion, but at that time it had met with a cold reception from ground surgeons, who believed air evacuation to be impractical. The plan called for the corps surgeon to establish holding hospitals near forward airfields, with the air surgeon responsible for supervision and the theater surgeon for over-all co-ordination. It was in this connection that the 38th Evacuation Hospital was established at Télergma.[29]

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[27] (1) Annual Rpt, Med Sec, EBS, 1943. (2) Annual Rpt, Med Sec, NATOUSA, 1943. (3) Med Hist Data, 161st Med Bn (1st Bn, 16th Med Regt), 22 Oct 44. (4) Unsigned Memo, n.d., sub: Notes on General Kirk's Observations of Med Serv in North Africa, May 43.

[28] (1) Link and Coleman, *Medical Support of the Army Air Forces in World War II*, pp. 473–81. (2) Hist of 12th Air Force Med Sec, ch. VIII. (3) M Sgt A. I. Zelen, Med Dept, Hospitalization and Evacuation in the Mediterranean Theater of Operations (MS draft), p. 51. (4) Med Hist, 802d Med Air Evac Trans Squadron. (5) Statement of Gen Kenner to author, 26 Mar 59. See also, Ltr, Maj Gen Earle Standlee (Ret) to Col Coates, 15 Jan 59, commenting on preliminary draft of this volume.

The planes used were C-47's, equipped with litter supports, which made it possible to carry 18 litter patients and attendants. There were no regular schedules, since the planes were used for evacuation only on their return runs after discharging cargo or passengers in the combat zone. Requests were made through the medical section, AFHQ, and evacuation officers in the combat areas were notified each evening as to how many planes would be available the following day. Communication was by teletype, telephone, radio, and air courier. Patients were assembled near the airfields so they could be loaded with a minimum of delay.

Although planes were not marked with the Geneva Cross, and flew at low altitudes, there were no enemy attacks. Before 10 March the medical personnel handling air evacuation were enlisted men from the medical sections of various groups of the 51st Troop Carrier Wing. After that date personnel—including nurses as well as enlisted men—were supplied by the 802d Medical Air Evacuation Transport Squadron. Surgeons on the ground supervised loading and unloading. The surgeon of the 51st Troop Carrier Wing was responsible for records, supplies used in flight, and property exchange. The ratio was two planes used for resupply for every ten loads of patients, although one plane could be made to serve if returning personnel were dispersed among cargo transports.

In the Kasserine phase of the campaign, air evacuation was from Youks-les-Bains, with the British 12th Casualty Clearing Station serving as holding unit for evacuees. During the II Corps operations in southern Tunisia the same airfield was used, with the holding function shifted to the 9th Evacuation Hospital. One planeload of 16 patients was flown direct from Thélepte. When operations shifted to the northern sector, the lines of evacuation ran from Souk el Arba and Sidi Smaïl. The 38th Evacuation Hospital was close to both airfields. In the final days of the campaign, the 10th Field Hospital served as a holding unit at Souk el Arba. The overcrowded hospitals of the Eastern Base Section were bypassed, the planes returning directly to their own bases at Algiers and Oran, sometimes by an inland route and sometimes flying low over the water. Figures for air evacuation from the Tunisian fronts between 16 January and 23 May 1943, as reported by the 802d Medical Air Evacuation Transport Squadron (MAETS), are broken down by points of origin and destination in Table 2.

The Air surgeon estimated that 887 patients had been evacuated by air in North Africa before the formal service was inaugurated on 16 January 1943, but

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[29] See also p. 132, above, and pp. 204-05, below.

TABLE 2—AIR EVACUATION FROM TUNISIA, 16 JANUARY–23 MAY 1943

Route	Air Miles	Number of Patients Carried		
		Litter	Sitting	Total
Total	....	3,840	966	4,806
Youks-les-Bains to Algiers	270	125	90	215
Youks-les-Bains to Oran	470	1,579	829	2,408
Thélepte to Algiers	320	16	....	16
Souk el Arba to Algiers	310	429	45	474
Souk el Arba to Oran	525	650	....	650
Sidi Smaïl to Algiers	320	174	2	176
Sidi Smaïl to Oran	540	867	....	867

Source: Med Hist, 802d MAETS.

by no means all of these came from Tunisia.[30]

It was this experience in North Africa that gave both ground and air surgeons some idea of the immense capabilities of air evacuation, which continued to be used increasingly through the rest of the war.

Medical Supplies and Equipment

Shipping shortages and the speed with which Operation TORCH was mounted held medical supplies and equipment carried by the task forces to the lowest possible level consistent with safety. There also were difficulties in getting together all of the items scheduled for follow-up convoys. Hospitals destined for North Africa arrived in England with no more than 25 percent of their medical equipment and none of their quartermaster equipment. Deficiencies were made up in the United Kingdom, but only by stripping the European theater of much of its reserve stock.[31]

Until the arrival of trained medical supply personnel late in December 1942, supplies for the Western Task Force were handled by division medical supply officers and by personnel of a hospital ship platoon. For the Center Task Force, the 51st Medical Battalion took over the medical supply function shortly after its arrival on the D plus 3 convoy. Here trained medical supply personnel were available within two weeks. The 1st Advance Section, 2d Medical Supply Depot, arrived in Oran on 21 November and carried on the medical supply func-

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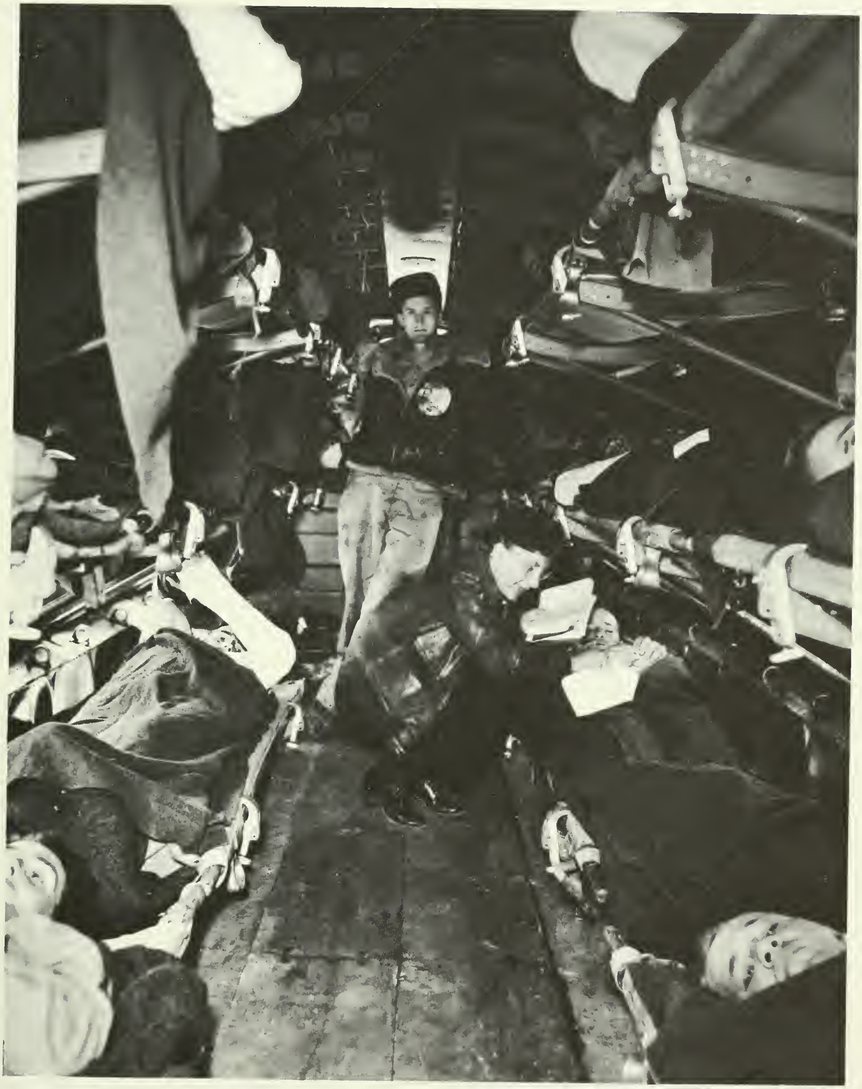
[30] The II Corps surgeon, in his annual report for 1943, gives a figure of 3,313 patients evacuated by air between 1 January and 15 May. The larger figure shown in Table 2 is due in part to the additional week included at the heavy end of the period, and in part to the inclusion of Air Forces casualties, not reported by II Corps.

[31] Ltr, Brig Gen Paul R. Hawley, Surg, ETOUSA, to Col Corby, 5 Nov 42. Except as otherwise noted, primary sources for this section are: (1) Med Hist, 2d Med Supply Depot Co, 1942, 1943; (2) Annual Rpt, Surg, II Corps, 1943; (3) T Sgt William L. Davidson, Medical Supply in the Mediterranean Theater of Operations, United States Army, pp. 1–29; (4) Rpt of Med Supply Activities, NATOUSA, Nov 42–Nov 43.



C–47 CARGO PLANE CONVERTED TO AMBULANCE DUTY *in North Africa. The attending nurse is 2d Lt. Aleda E. Lutz, one of eight U.S. nurses killed in action in the MTO.*

tion for the growing body of troops in the area until a base section organization was established early in December.[32]

The U.S. components of the Eastern Task Force were supplied, like the British components, through the British First Army. Even items not available in British depots were requisitioned from ETO sources by the British. This dependence upon British supplies continued through the first phase of the Tunisia Campaign, creating many difficulties because of differences in practice between the two medical services. Supply levels deemed adequate by the British were insufficient by the more lavish American standards.[33]

Medical supply in Tunisia passed into American channels with the concentration of II Corps in the Constantine-Tébessa area at the beginning of 1943. The 1st Advance Section of the 2d Medical Supply Depot opened in Constantine on 8 January, moving a few days later to Télergma, where it relieved elements of the 16th Medical Regiment. The section shifted to Bekkaria, east of Tébessa, on 20 January, and thereafter remained as close as possible to the II Corps medical installations. The supply depot withdrew to Aïn Beïda on 20 February, following the Kasserine breakthrough, then moved up to Souk Ahras for a brief time, but was back at Bekkaria before the Gafsa–Maknassy–El Guettar campaign began in mid-March. The depot was in operation east of Tabarka by 23 April in support of the drive to Bizerte. On 15 May, immediately after the German surrender in Tunisia, the 1st Advance Section, 2d Medical Depot Company, moved to Mateur, where it was later relieved by a base section depot.

After activation of the Eastern Base Section late in February, medical supplies for II Corps were received through the base depot at Aïn M'lilla, south of Constantine, or one of the two subdepots at Philippeville and Bône. Distance and transportation difficulties always complicated the supply problem, but there were no serious shortages of any necessary item at any time during the Tunisia Campaign.

Medical supplies in North Africa were furnished initially on the basis of the Medical Maintenance Unit (MMU), designed to meet the medical requirements of 10,000 men for thirty days. Deliveries to the theater were automatic, determined by troop strength. Combat experience quickly revealed deficiencies and overstocks in the MMU, which was supplanted midway through the Tunisia Campaign by the Balanced Depot Stock, worked out by supply experts in the Office of The Surgeon General.

Items of basic equipment were the most difficult to replace, but in spite of depot stringencies, hospitals assigned to the combat zone usually managed to get there with equipment in excess of their organizational allowances, and so were able to weather loss and breakage.

Professional Services

Combat Medicine and Surgery

The amphibious phase of the North African campaign was too brief, and the

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[32] See pp. 207–09, below, for base section medical supply activities.

[33] Rpt, Gen Kenner to CinC, AFHQ, 7 Jan 43, sub: Inspection of Med Troops and Installations, First Army Area.

Medical Supplies on the Invasion Beach at Les Andalouses, *west of Oran, 9 November.*

nature of the fighting too restricted, to provide positive experience in combat medicine and surgery. The primary lesson for the Medical Department was the necessity in future landing operations of establishing clearing stations and hospitals ashore at the earliest possible date, with sufficient equipment and adequate personnel for emergency surgery and medical care. In Tunisia, invaluable experience was gained in the management of wounds, in the equipping and staffing of facilities for forward surgery, and in the handling of psychiatric cases. Even before the campaign was over, much of this experience was applied toward the improvement of medical and surgical care in the combat zone.

Forward Surgery—In the early phases of the Tunisia Campaign, mobile hospitals were located so far to the rear—often 50 to 100 miles—that a far heavier surgical load fell on the clearing stations than had ever been contemplated. Plasma as a guard against shock was given in the collecting stations and often in the aid stations, but as a general rule only emergency surgery was performed in the division area. Surgeons in the division clearing stations administered plasma, controlled hemorrhage, and closed sucking chest wounds, but completed traumatic amputations only where necessary to stop hemorrhage.[34]

After emergency treatment, surgical cases went to the clearing stations of the corps medical battalions, which were set up through necessity as forward surgical hospitals despite the fact that they were inadequately equipped and staffed for this purpose. Surgical and shock teams worked together effectively in these installations with minimal equipment, but there were neither beds nor personnel for postoperative care. Intravenous fluids could not be administered; special diets were not available; whole-blood transfusions were possible only with detachment personnel as donors and without means of checking blood for malaria or syphilis. As a result, patients were evacuated as rapidly as possible, the majority in six to eight hours after surgery and some while still under anesthesia.

Col. Edward D. Churchill, surgical consultant in the theater, explored the situation during the southern campaign, and his recommendations had much to do with the improvement of conditions in the northern sector, where smaller evacuation hospitals were set up closer to the front. Associated with Colonel Churchill in the evaluation of II Corps surgery was Maj. (later Col.) Howard E. Snyder, of the 77th Evacuation Hospital, who reported to corps headquarters for temporary duty on 15 March 1943, and remained as surgical consultant to the corps.[35] In the Sicily Campaign, as will be seen later, the whole concept of forward surgery was altered as a result of the Tunisian experience.

One of the lessons quickly driven home in the Tunisia Campaign was that plasma was not a complete substitute for blood in combat surgery. No supply of whole blood was available, nor had any provision been made to fly it in. To meet the immediate and pressing need, an informal blood bank was established at the Gafsa section of the 48th Surgical Hospital, where 25 to 50 troops were detailed each day as donors. Out of the II Corps blood bank of 1943 grew the theater blood bank of 1944.[36]

The Psychiatric Problem—The outstanding medical problem of the Tunisia Campaign was the unexpectedly high incidence of psychiatric disorders. Originally diagnosed as shellshock, following World War I terminology, or as battle fatigue, these cases constituted a heavy burden on forward medical units. In the absence of specialized knowledge on the part of regimental and division medical personnel, most of the psychiatric cases in the early stages of the campaign were evacuated to communications zone hospitals, from which less than 3 percent returned to combat duty.[37]

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[34] Sources for this section are: (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Annual Rpt, Surg, II Corps, 1943; (3) Rpt to CO, 2d Aux Surg Gp, by Maj Kenneth F. Lowry, and Capt Forrest E. Lowry, 13 Aug 43, sub: Forward Surgery; (4) Rpt to Surg, NATOUSA, by Col Edward D. Churchill, 16 Apr 43, sub: Memoranda on Forward Surgery; (5) Surg, NATOUSA, Cir Ltr No. 13, 15 May 43, sub: Memoranda on Forward Surgery; (6) Surg, NATOUSA, Cir Ltr No. 18, 14 Jun 43, sub: Forward Surgery and Aux Surg Teams.

[35] Howard E. Snyder, "Fifth U.S. Army," vol. 1, *Activities of Surgical Consultants*, "Medical Department, U.S. Army," subseries Surgery in World War II (Washington, 1962), ch. XVI.

[36] Ltrs, Col Arnest to Col Coates, 17 Nov 58; and Gen Standlee to Col Coates, 15 Jan 59, both commenting on preliminary draft of this volume. See also pp. 352–53, below.

[37] Major sources for this section are: (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Annual Rpt, Surg, II Corps, 1943; (3) Surg, NATOUSA, Cir Ltr No. 4, 22 Mar 43, sub: Psychotic and Neurotic

In the battles of El Guettar and Maknassy in southern Tunisia, psychiatric reactions were responsible for 20 percent of all battlefield evacuations, and for days at a time the proportion ran as high as 34 percent.[38] Experimenting with these cases at the corps clearing station near Maknassy late in March 1943, Capt. (later Col.) Frederick R. Hanson, who had been sent out from the theater surgeon's office to investigate the problem, found that 30 percent of all psychiatric cases could return to full duty within thirty hours if properly treated close to the combat lines. The treatment Captain Hanson developed was heavy sedation at the clearing station, followed by transfer to an evacuation hospital where sedation and intensive psychotherapy were continued for three days. At the end of that time, the patient was returned to duty or was evacuated to the communications zone for further treatment.

In the Bizerte phase of the campaign, division surgeons were made responsible for the initial treatment, and psychiatrists for the follow-up were attached to the 9th, 11th, 15th, and 128th Evacuation Hospitals, all functioning in the forward area. Hanson himself was attached to the 48th Surgical Hospital, later reorganized as the 128th Evacuation. Cases returned to full duty without leaving the combat zone ranged from 58 to 63 percent.

Common Diseases—Aside from surgical and psychiatric problems, the Tunisia Campaign revealed little of a medical nature that had not been anticipated. Dysentery and diarrhea were prevalent among II Corps troops, but outbreaks were controlled by screening and by destruction of flies. Respiratory infections were a frequent occurrence, but were not particularly severe. Malaria was not a source of difficulty, since the campaign ended before the onset of the malaria season, and combat exposure was therefore not extensive. As a preventive measure, II Corps troops began taking atabrine on 4 April, with good compliance and minimal reactions.

Dental Service

The Tunisia Campaign revealed that the standard dental chest was not sufficiently portable to be carried close behind the lines. During periods of com-

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Patients, Their Management and Disposition; (4) Surg, NATOUSA, Cir Ltr No. 17, 12 Jun 43, sub: Neuropsychiatric Treatment in the Combat Zone; (5) Col. Frederick R. Hanson, comp. and ed., "Combat Psychiatry," Bulletin, *U.S. Army Medical Department,* Suppl Number, (November 1949). For a nonprofessional, but perceptive study see Brig. Gen. Elliot D. Cooke, *All But Me and Thee* (Washington: Infantry Journal Press, 1946).

[38] This terminology requires some explanation. Although the terms "casualty" and "battle casualty" were consistently applied in the Mediterranean theater to psychiatric disorders occurring in the combat zone, these cases are officially tabulated as "disease." Not to establish a new policy but to make explicit one supposedly already in effect, War Department Circular No. 195, dated 1 September 1943, stated: "Psychoneurosis or mental diseases developing under battle conditions (commonly but improperly designated battle neurosis, hysteria, shellshock, etc.) will not be classified as a battle casualty or reported as wounded or injured in action." By that date, however, the practice in the theater had become fixed, as will be seen from the documents cited in the preceding footnote. As late as 1949, Colonel Hanson and his collaborators were still employing the term "psychiatric casualty" in the sense in which they had used it prior to September 1943. For the sake of uniformity, all psychiatric disorders will be statistically treated as "disease" in this volume; but in deference to views widely held among psychiatrists, the term "disease" will not be used in the text to categorize cases falling under the general classification of "combat exhaustion."

bat, cases requiring emergency dental treatment were cared for at division clearing stations, and as much routine work as possible was done in the division area. For the most part, however, the routine work was deferred until periods of combat inactivity. During periods of actual contact with the enemy, when little dental work could be done, dental personnel usually served in other capacities such as assistant battalion surgeon; supply, mess, records, motor, and admissions officer; and anesthetist. Enlisted dental technicians served as medical technicians and as company aidmen.[39]

A need for dental prosthetics was observed throughout the Tunisia Campaign, but no facilities for such work were available in the II Corps area, and only inadequate facilities appeared anywhere in the theater. The 34th Division dental surgeon found a partial solution of this problem in March when captured German equipment was used to set up a prosthetics laboratory for the division.[40]

Veterinary Service

The veterinary service of II Corps during the Tunisia Campaign was largely confined to routine food inspections by division veterinarians. Since no fresh meat was available until April, the duties were not arduous, and veterinary personnel, like dental personnel, were frequently used in administrative and other capacities. Veterinary functions included the care of animals only for a brief interval in late April when mules were used for evacuation of the wounded in the 9th Division area. The veterinary officer attached to the Twelfth Air Force headquarters in Algiers carried on food inspection work for the air force units.[41]

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[39] Sources for this section are: (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Memo for Supply Serv, from Brig Gen R. B. Mills, 10 May 43; (3) MS, History of the United States Army Dental Corps in the North African Theater of Operations, World War II, pp. 1–24. The use of dental personnel under combat conditions in ways similar to those mentioned in the text was general, despite regulations against it. See (4) Hq, NATOUSA, Cir Ltr No. 36, 17 Mar 43; and (5) Ltr, Brig Gen Lynn H. Tingay to Col Coates, 25 Feb 59, commenting on preliminary draft of this volume.

[40] Annual Rpt, Surg, 34th Div, 1943.

[41] Major sources for this section are: (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Annual Rpt, Surg, 9th Div, 1943; (3) Annual Rpt, Twelfth Air Force Med Activities, 1943.

CHAPTER IV

Sicily and the Mediterranean Islands

Sicily was selected as the next Allied target in the Mediterranean at the Casablanca Conference, 14–23 January 1943. The choice reflected both the British predilection for a Mediterranean strategy and the American reluctance to detract in any way from the ultimate invasion of northern France. The conquest of Sicily was justified for both groups on the ground that it would relieve some of the pressure on the Russian front, help knock Italy out of the war, and open the Mediterranean to Allied shipping. In British eyes Sicily was also a step along Churchill's "soft underbelly" route to the Continent, while the American strategists looked upon such a campaign as the most profitable way to employ troops already in Africa, at a minimum cost in shipping. There was also disagreement on plans, which were not finally approved by the Combined Chiefs of Staff until May. Like the Tunisia Campaign, operations in Sicily (known by the code name HUSKY) were to be carried out by an Allied force under field command of General Alexander, this time designated the 15th Army Group. The components were Montgomery's British Eighth Army, reinforced by the 1st Canadian Division, and a U.S. Seventh Army commanded by Patton, with Maj. Gen. Geoffrey Keyes as his deputy. The date ultimately fixed for the invasion was 10 July.[1]

Medical Preparations for Operation HUSKY

Medical Planning for the Assault

Medical planning for the Sicily Campaign began early in March 1943 under

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[1] Military sources for the Sicily Campaign as a whole are: (1) Field Marshal the Viscount Alexander of Tunis, "The Conquest of Sicily, 10th July, 1943 to 17th August, 1943," Supplement to the *London Gazette,* 12 February 1948; (2) Rpt of Opns, U.S. Seventh Army in Sicilian Campaign, 10 Jul–17 Aug 43; (3) Opns of II Corps, U.S. Army, in Sicily, 10 Jul–17 Aug 43; (4) Samuel Eliot Morison, "History of United States Naval Operations in World War II," vol. IX, *Sicily-Salerno-Anzio, January 1943–June 1944* (Boston: Little, Brown and Company, 1954); (5) Craven and Cate, eds., *Europe: TORCH to POINTBLANK;* (6) Eisenhower, *Crusade in Europe;* (7) Patton, *War As I Knew It;* (8) Bradley, *A Soldier's Story;* (9) Truscott, *Command Missions;* (10) Kesselring, *A Soldier's Record;* (11) Knickerbocker and others, *Story of the First Division in World War II;* (12) Trahan, ed., *History of the Second United States Armored Division,* pp. 47–59; (13) Taggert, ed., *History of the Third Infantry Division in World War II,* pp. 51–76; (14) *The Fighting Forty-Fifth, the Combat Report of an Infantry Division* (Baton Rouge: Army and Navy Publishing Company, 1946); (15) W. Forrest Dawson, ed., *Saga of the All American* (Atlanta: A. Love Enterprises, 1946), unpaged; (16) Lt Col Albert N. Garland and Howard McGaw Smyth, *Sicily and the Surrender of Italy,* UNITED STATES ARMY IN WORLD WAR II (Washington, 1965).

General Patton *and Brig. Gen. Theodore Roosevelt, Jr., deputy commander of the 1st Division.*

the general direction of Col. Daniel Franklin. Colonel Franklin had succeeded General Kenner as Western Task Force surgeon in December 1942 and continued in the same position after the task force was redesignated I Armored Corps in January 1943 and assigned to occupation duties in Morocco. During the training period, the corps was known simply as Force 343, the designation Seventh Army being applied only after the troops were at sea on the way to Sicily. Colonel Franklin then became Surgeon, Seventh Army.[2]

The Seventh Army medical section evolved from a nucleus carried over with Colonel Franklin from the Western Task Force. By April the section was split between a forward echelon headquarters in Mostaganem, Algeria, and a rear echelon headquarters in Oran. The surgeon, 2 officers, and 2 enlisted men at forward echelon headquarters were occupied with medical planning for the invasion of Sicily. Rear echelon personnel, including 3 officers and 9 enlisted men, were engaged with matters of medical supply, preventive medicine, and routine administration.

Others concerned at the staff level with medical planning for Husky were Colonel Arnest, II Corps surgeon; and Col. L. Holmes Ginn, Jr. who left the 1st Armored Division in March to become chief surgeon of the 15th Army Group. The Services of Supply medical section assigned an officer to the Sicilian planning group the last week in March, and preparation of requisitions for supplies from the zone of interior began in mid-April.

Plans for medical support could be made specific only after the Tunisia Campaign ended, when it became possible to complete assignment of troops and to set a timetable for the invasion. Primary emphasis was placed on mobility and the shortening of evacuation lines.

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[2] Sources for medical preparations for the Sicily Campaign, including both planning and training, are: (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Rpt of Opns, U.S. Seventh Army, in Sicilian Campaign, an. N; (3) Annual Rpt, Surg, Seventh Army, 1943; (4) Interv with Col Franklin, Surg, Seventh Army, 28 Jun 44; (5) Surg, II Corps, Rpt of Med Activities, Sicilian Campaign; (6) Annual Rpt, Surg, 1st Div, 1943; (7) Annual Rpt, Surg, 2d Armd Div, 1943; (8) Med Hist, 3d Div, 1943; (9) Annual Rpt, Surg, 9th Div, 1943; (10) Annual Rpt, Surg, 45th Div, 1943; (11) Annual Rpt, Surg, 82d A/B Div, 1943; (12) Annual Rpt, 54th Med Bn, 1943; (13) Annual Rpt, 11th Fld Hosp, 1944; (14) Clift, Field Opns pp. 145–79.

Medical battalions under corps and army control were reorganized to give each collecting company a clearing element, the two platoons of the clearing company being supplemented for this purpose by a third clearing platoon made up of the station sections of the three collecting companies. Each regimental combat team in the assault was to be accompanied by one of these collecting-clearing companies, which had demonstrated their efficiency in training exercises. Each task force was to have one ambulance platoon in addition to those of the medical battalions, and at least one field hospital unit. The field hospital platoons were to be used for forward surgery and as holding units for nontransportables, combining the functions performed in Tunisia by the surgical hospital and the corps medical battalion clearing stations.

Attached medical troops were to land with unit equipment, augmented by such special supply items as blood plasma, morphine syrettes, and extra dressings. A balanced medical supply adequate for seven days of maintenance was to be on the D-day convoy. Those supplies not hand-carried by the debarking medical troops were to be unloaded on the beaches as rapidly as the situation permitted.

After the initial landings, each division was to be supported by one 400-bed evacuation hospital. When they were needed, 750-bed evacuation hospitals were to be sent to the island, each to back up two of the smaller units. Evacuation from the beaches was to be by troop carrier or LST (Landing Ship, Tank) until hospital ships were available, with air evacuation beginning at the earliest possible date after suitable fields had been secured. No fixed hospitals were to be brought into Sicily until the conquest of the island was complete, all casualties with hospitalization expectancy of more than seven days being returned to North Africa.

Limited shipping space made it necessary to mount the invasion in three separate convoys, to be landed at 4-day intervals, the estimated turnaround time from Tunisian ports. Attached medical troops, the medical battalions, and the field hospitals with their surgical teams, were scheduled for the assault group; the 400-bed evacuation hospitals were to be on the second, or D plus 4 convoy; and the 750-bed evacuations were to be sent on call of the Seventh Army surgeon. Medical service at sea was to be supplied by the Navy on the larger vessels, but the LST's, which were to sail from Tunis and Bizerte, were to be staffed by medical personnel detached from the 77th Evacuation Hospital, then relatively inactive near Bône. The 77th Evacuation also assigned personnel to the naval base at Bizerte to assist with the returning casualties.

Training of Medical Troops

Medical units designated to participate in the Sicily Campaign were assigned initially to the task forces. Attached medical troops, organic and separate medical battalions, and field hospitals all received special training with the combat forces they were to serve. Training for landing operations began 10 May at the Fifth Army Invasion Training Center at Arzew near Oran. Here all medical personnel of Force 343 learned how to waterproof equipment and gained realistic experi-

Colonel Franklin

ence under simulated combat conditions in debarking from landing craft, setting up and operating beach installations, and shore-to-ship evacuation of the wounded.[3]

In addition to this assault training, all units were given physical conditioning and instruction in the prevention of diseases likely to be encountered. Malaria came in for special attention, since the assault was to be made at the height of the season. Where appropriate, the men received specialized medical training such as the application of splints, treatment of shock, control of hemorrhage, and transportation of the wounded. Both medical and combat personnel received instruction in first aid.

Similar training for medical personnel accompanying the 45th Division, which sailed for Sicily directly from the United States, was conducted in the zone of interior, the division stopping at Oran just long enough for a rehearsal on the Arzew beaches.

A special problem was posed by elements of the 82d Airborne Division that were to spearhead the invasion, since the organic 307th Airborne Medical Company normally moved by glider or by more conventional means of travel and was not included in the assault plans. Four officers and twenty-five enlisted men from the medical company, all volunteers, were trained as parachutists to augment the regimental medical detachments.

Medical Support of Seventh Army in the Field

Preliminary Operations

Off the coast of Tunisia, northeast of Cap Bon, lies rocky, inhospitable Pantelleria Island. In mid-1943 Pantelleria was a heavily fortified Italian air base that dominated the invasion route to Sicily and so had to be taken before Husky could be mounted. Only forty-two square miles in area, the island rises precipitously from the sea. There was just one beach on which a seaborne landing could be made, and that one was narrow, with tricky offshore currents and a heavy surf. The only harbor was small and too shallow for any but light-draft vessels. Should troops succeed in forcing a landing in spite of these difficulties, the surface of the island, with its rock masses and layers of volcanic ash, its stone fences and square stone houses, was ideally adapted for defense by its garrison of more than 10,000.[4]

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[3] See Medical Aspects of Amphibious Operations, prepared at this center. With only minor modifications, the same manual was later used to train medical troops for the Normandy landings. Reproduced in full in Clift, Field Opns, pp. 146–74.

The British 1st Division was selected for the assault on Pantelleria, but the troops were to go in only after the island had been bombed to rubble. The air offensive against the "Italian Gibraltar" opened on 18 May, less than a week after the German surrender in Tunisia, and continued with mounting fury to D-day, set for 11 June. Heavy naval guns joined in the bombardment the night of 10–11 June as the convoy carrying the assault troops moved into the assembly area. The first wave of landing craft hit the beach a few minutes before noon, to be met by trifling small arms fire and a rush of white flags. The surrender of the island had in fact been ordered by its commander for 1100, before a single soldier set foot upon it.

The British Army medical units in the assault were thus not called upon to function in combat. The airfields on Pantelleria were quickly converted to Allied use, and within a week an American station hospital under base section control took over the medical service of the island.[5]

The reduction of Pantelleria was followed immediately by a bombardment of the island of Lampedusa, between Malta and the east coast of Tunisia, which resulted in the surrender of the island on 12 June, again without the intervention of ground troops. The neighboring island of Linosa surrendered the next day without waiting to be bombed. A British naval party took possession of uninhabited Lampione on 14 June, completing the Allied occupation of the Pelagies.

COLONEL GINN

From that date until 9 July the North African Air Force and the RAF, joined by the U.S. Ninth Air Force from its bases in the Middle East, concentrated on the ports and airfields of Sicily. The greatest amphibious operation in all history, measured by its initial landing strength, was already at sea when the bombers finally retired. High winds hampered but did not stop the parachutists who led the way, and rough seas did not deter the landing craft. The invasion of Sicily proceeded on schedule.

The Assault Phase

The Allied assault on Sicily was concentrated in the southeast corner of the island. British and Canadian forces landed at the southern tip of the Sicilian triangle, and at various points on the east coast. The Americans enveloped a 70-mile strip along the southern shore, to the left of the British.[6]

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[4] (1) Craven and Cate, eds., *Europe: TORCH to POINTBLANK,* pp. 419–42. (2) Eisenhower, *Crusade in Europe,* pp. 164–66.

[5] See p. 193, below.

Seventh Army stormed the beaches at three separate points in the early morning of 10 July 1943. CENT Force, built around the untested 45th Division, straddled Scoglitti on the right flank, while the DIME Force, spearheaded by two regimental combat teams of the veteran 1st Division and two Ranger battalions, landed in the vicinity of Gela about ten miles farther west. These two forces made up a reorganized II Corps under General Bradley. The JOSS Force commanded by Maj. Gen. Lucian K. Truscott, Jr., and composed of the reinforced 3d Division, a Ranger battalion, and a combat command of the 2d Armored Division, went ashore at Licata on the left flank of the American sector. The remainder of the 2d Armored, and the remaining RCT of the 1st Division, stood offshore as a floating reserve until mid-afternoon of D-day, then debarked near Gela where the fighting was heaviest. The 505th Regimental Combat Team and the 3d Battalion of the 504th RCT, 82d Airborne Division, which were dropped behind the beaches a few hours ahead of the assault, were under army control.

The task force surgeons were, for the CENT Force, Lt. Col. Nesbitt L. Miller of the 45th Division; for the DIME Force, Lt. Col. (later Col.) James C. Van Valin of the 1st Division; and for the JOSS Force, Lt. Col. (later Col.) Matthew C. Pugsley of the 3d Division. The floating reserve, called the KOOL Force, was under command of Maj. Gen. Hugh J. Gaffey and the force surgeon was Col. Abner Zehm, both of the 2d Armored Division.

Scoglitti Landings—On the CENT beaches landings were delayed an hour by the heavy seas. Many units landed on the wrong beaches and about 20 percent of the landing craft were destroyed on the rocks. All assault units were nevertheless ashore by 0600. Early opposition came from Italian home guards, who fought only halfheartedly or not all, giving the 45th Division time to establish itself firmly before air activity and and German counterattacks began. The beachhead was secure by the end of the day.

D plus 1 saw counterattacks on the extreme right repulsed by the 180th Infantry and the 505th Parachute Combat Team—which had been forced down in the area instead of at its designated drop north of Gela. In a parallel action elements of the 157th and 179th Regimental Combat Teams captured Comiso airfield against strong opposition. By the end of the third day, 12 July, the Scoglitti beachhead was fifteen miles deep and the U.S. forces made contact with the Canadians on the left flank of the British Eighth Army. The capture of Biscari (Acati) airfield northwest of Comiso on D plus 4 completed the initial mission of the CENT Force.

The medical complement of the CENT Force included the 120th Medical Battalion, organic to the 45th Division; the 54th Medical Battalion; one platoon of the 11th Field Hospital; and seven teams of the 3d Auxiliary Surgical Group. Medical detachments went ashore with their respective combat units, and battalion aid stations were established half a mile to a mile inland within the first two hours. Collecting elements of the organic medical battalion followed about an hour later, moving casualties from the aid stations directly to the beach, where naval shore groups took over. Trucks borrowed from the infantry were substituted for the ambulances that had not yet been unloaded from the ships. The scattered collecting units reassembled into their companies and established their own collecting stations shortly after noon. By 1600 hours the 120th Medical Battalion had a clearing station set up about three miles inland in support of the 179th and 180th Regimental Combat Teams on the left. Casualties from the 157th RCT on the right and from the paratroop force fighting around Comiso airfield were evacuated from aid stations directly to the beach until early afternoon of D plus 1, when the 54th Medical Battalion opened a clearing station in that area.

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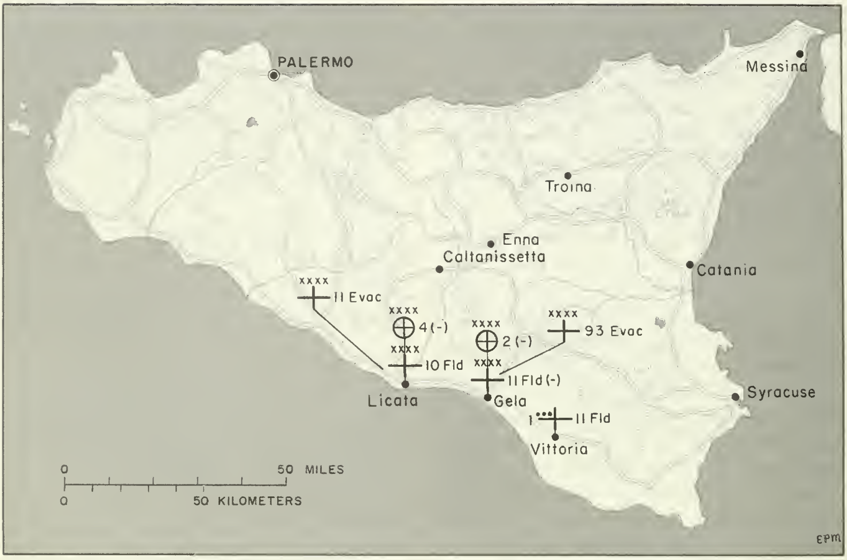
[6] Military sources for the assault are those cited at the beginning of this chapter. Medical sources primarily relied upon for the assault phase are: (1) Rpt of Opns, U.S. Seventh Army in Sicilian Campaign, an. N; (2) Annual Rpt, Surg, Seventh Army, 1943; (3) Surg, II Corps, Rpt of Med Activities in Sicilian Campaign; (4) Annual Rpt, Med Sec, NATOUSA, 1943; (5) Clift, Field Opns, pp. 180–86; (6) Unit rpts of div surgs, med bns, and hosps mentioned in the text. The British side of the story is in Crew, *Army Medical Services: Campaigns*, vol. III.

All medical units were ashore with their equipment by 12 July, although the field hospital platoon was not in operation until the 14th. Collecting and clearing stations moved frequently during the first few days of combat as troops pushed forward rapidly against crumbling opposition. A clearing platoon of the 120th Medical Battalion, established in an Italian military hospital in Vittoria on 13 July, served as a temporary surgical center, while the 54th Medical Battalion took over all responsibility for beach evacuation. Shoreward movement of casualties was stopped on 15 July because available LST's were not properly prepared to receive them, but resumed the next day after arrival of the British hospital carrier *Leinster.* Nineteen nurses of the 15th Evacuation Hospital helped care for patients in the clearing stations from 14 July until their own unit went into operation on the 20th. Surgical teams worked in the field hospital unit and with the clearing stations of both the medical battalions. *(Map 14)*

Gela Landings—The DIME Force got ashore in the vicinity of Gela beginning at 0245 according to schedule against relatively light opposition. Only the Rangers, who landed in Gela itself, ran into trouble in the form of Italian tanks, but managed to seize and hold the town. Enemy air activity was sporadic during the day, and resistance stiffened around the perimeter of the beachhead. The first counterattack came on the morning of D plus 1, when twenty enemy tanks broke through the 26th Infantry and got within 2,000 yards of the beach before they were stopped by artillery fire. Another forty tanks cut across the 16th RCT, but those too were turned back by artillery, bazookas, and grenades before the two tank columns could join and isolate the beachhead. The last counterattack, at 1630 that afternoon, was only stopped by accurate and deadly fire from the naval guns offshore.

The task force moved inland against less vigorous opposition the next day, taking Ponte Olivo airfield and extending the beachhead to a depth of four miles. That night the second airlift of the 82d Airborne arrived simultaneously


PALERMO
Messina
Troina
Enna
Caltanissetta
Catania
XXXX
11 Evac
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4(-)
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2(-)
XXXX
93 Evac
XXXX
10 Fld
XXXX
11 Fld (-)
Licata
Gela
I
11 Fld
Vittoria
Syracuse
0
50 MILES
0
50 KILOMETERS
EPM

Map 14—Seventh Army Hospitals, 16 July 1943

with a group of enemy bombers, and in the confusion a number of the troop carriers were shot down by U.S. fire. All assault phase objectives were secured by D plus 4, 14 July.

Medical battalions supporting the Gela operation, including both the landing units and the reserve, were the 1st and elements of the 48th Armored, organic to the combat units; two collecting-clearing companies of the 51st; and the 261st Amphibious Medical Battalion, initially attached to the 531st Engineer Shore Regiment as part of the beach group. Supplementing these were two platoons of the 11th Field Hospital; seven teams of the 2d Auxiliary Surgical Group and three teams of the 3d; and two ambulance platoons of the 36th Ambulance Battalion.

Except for battalion medical detachments and naval beach parties, the landing of medical personnel and equipment on the Gela beaches was unduly delayed. One company of the 261st Amphibious Medical Battalion managed to set up a clearing station in support of the 26th RCT some seven hours after the assault began by using the equipment of another company. The 1st Medical Battalion established a clearing station for the 16th RCT at H plus 13, but had no equipment other than one medical chest. Casualties from this station were evacuated to the beach by ambulances of the 51st Medical Battalion, one company of which was ashore but inoperative. The field hospital platoons landed at H plus 6, but on the wrong beaches. The invasion was in its fourth day before the hospital was functioning at Gela.

Casualties were relatively heavy on the DIME beaches, where enemy counteraction was most violent. Some medical equipment, including ambulances, was lost at sea and by enemy action on the beach. The medical battalions were nevertheless in normal operation by 12 July. The 51st, reinforced by surgical teams, held nontransportables until the field hospital opened, while the 261st cared for cases expected to return to duty within a week. Wherever possible, surgery was performed on the ships rather than in shore installations during the first two or three days, but all clearing stations handled surgical cases when evacuation from the beach was interrupted. The withdrawal of the transports on 12 and 13 July halted evacuation in the DIME sector, but air evacuation from the Ponte Olivo field began on the 14th. A hospital ship was available the following day, and on 16 July the 400-bed 93d Evacuation Hospital opened near Ponte Olivo. (*See Map 14.*)

Licata Landings—The JOSS Force, which had crossed the Strait of Sicily from Tunisian ports in LST's, made the first real shore-to-shore landing craft operation, such as would later be used to cross the English Channel. Rough seas held up the landings until shortly before dawn, and the low gradient of the beaches forced the craft aground too far from dry land. The assault troops nevertheless got ashore in good order against only nominal opposition. The town fell quickly, and before the first day was over strong combat patrols were 4 or 5 miles inland. The beachhead was 15 miles in depth and all initial objectives were taken by D plus 2.

Medical units organic to the combat divisions were the 3d Medical Battalion and a company of the 48th Armored Medical Battalion. Supporting these were the 56th Medical Battalion and a collecting-clearing company of the 51st; the 10th Field Hospital; nine teams of the 3d Auxiliary Surgical Group; and a platoon of the 36th Ambulance Battalion. As in the CENT and DIME landings, medical detachments of JOSS followed their combat units ashore within two hours. Collecting companies were only an hour or two behind. Casualties were brought directly to the naval beach installations until clearings stations could be set up on D plus 1. Congestion on the beaches prevented earlier unloading of equipment. The field hospital also opened on D plus 1. Troops in the Licata sector moved rapidly, and medical installations kept pace, leaving only elements of the 56th Medical Battalion at the beach to handle evacuation from the island. By 15 July, when the 11th Evacuation Hospital opened northwest of Licata, a normal chain of evacuation was functioning smoothly. (*See Map 14.*)

In all sectors the treatment of civilians wounded or injured as a result of the invasion was an acute problem. Local hospital facilities were inadequate, even to care for routine illnesses, and in the landing phase Seventh Army medical supplies and beds could be spared to treat only emergency cases.

The Campaign in Western Sicily

By 16 July the U.S. Seventh and British Eighth Armies had reached the line marking the end of the amphibious

EVACUATING WOUNDED TO LANDING CRAFT *for return to transports, Gela area, 12 July.*

phase, and 15th Army Group headquarters issued field orders for completing the conquest of Sicily. Eighth Army was to drive up the eastern coast to Messina; Seventh Army, which now numbered about 142,000 troops, was to capture Palermo and reduce the western end of the island. To accomplish this mission, II Corps was to strike north from Gela with the 1st and 45th Divisions, while a newly constituted Provisional Corps under General Keyes was to operate in the less rugged area northwest of Licata with the 3d Infantry, 2d Armored, and 82d Airborne Divisions, the last operating as infantry. The recently arrived 39th Regimental Combat Team of the 9th Division was also attached to the Provisional Corps at this time, the remainder of the division being left in reserve in Africa.[7]

The 261st Amphibious Medical Battalion remained in the Gela area under army control to handle evacuation to Tunis and Bizerte. The 54th Medical Battalion and a collecting-clearing company of the 51st were attached to II Corps, while the 56th and two companies of the 51st went to the Provisional Corps. Two platoons of the 11th Field Hospital and the 93d and 15th Evacuation Hospitals came under II Corps control, leaving the 10th Field, one platoon of the 11th

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[7] Military sources are the same as those already cited. Medical sources include: (1) Clift, Field Opns, pp. 187–92; (2) Surg's rpts already cited at the theater, army, and corps levels; (3) Unit rpts of div surgs, med bns, hosps, and other med organizations mentioned in the text.

Field, and the 11th Evacuation Hospital to serve the three divisions under Keyes. The surgical teams remained with the field hospital platoons and clearing companies to which they were already attached.

The Provisional Corps overran the whole western end of Sicily in a week. The enemy in this area fought only delaying actions, using reluctant Italian troops to cover the withdrawal of German units to the more mountainous northeastern sector, which provided both suitable terrain for a defensive stand and an escape route to the Italian mainland by way of the Strait of Messina. From Agrigento and Porto Empedocle, some 25 miles west of Licata, the 3d Division struck northwest for Palermo on the other side of the island, while the remainder of the corps followed the southern coast to Castelvetrano. Here the 2d Armored veered northeast to complete the envelopment of the capital, while the 82d Airborne, the 39th Infantry, and the 3d Ranger Battalion continued around the coast to take the western ports of Marsala and Trapani.

So rapid was the advance of the 2d Armored, and so disorganized the opposition, that the division surgeon, Colonel Zehm, personally brought in eight prisoners who had surrendered when intimidated by the colonel's flashlight.[8] Advance elements of the 2d Armored entered Palermo late in the evening of 22 July, and accepted the peaceful surrender of the city. Combat teams of both 3d and 45th Divisions were already in the outskirts.

Throughout this rapid movement, medical installations had great difficulty in keeping pace with the combat units. Organic medical battalions, by frequently changing position, managed to keep clearing stations in operation from 4 to 10 miles behind the constantly shifting points of contact with the enemy. The hospitals and corps clearing stations, however, were often left 25 to 50 miles in the rear of the action.

The heterogeneous nature of the forces involved also made it necessary to use the corps medical battalions in unorthodox ways. The 56th Medical Battalion left one collecting-clearing company at Licata to serve as a holding unit for air evacuation. Another company of the 56th was attached to the 3d Division, performing second-echelon medical service for the 30th Regimental Combat Team. The battalion's third collecting-clearing company went with the 82d Airborne around the western tip of Sicily to Trapani, using its own ambulances and captured enemy vehicles to make up for the transportation deficiencies inherent in paratroop medical detachments. On 21 July the 51st Medical Battalion established a clearing station at Menfi, on the southern line of march, and another at Castelvetrano, where the 3d Platoon of the 11th Field Hospital also went into operation the the next day. By this time, however, the infantry spearhead was at Marsala thirty miles farther west, while the 2d Armored was closer to Palermo than it was to Castelvetrano.

The 10th Field Hospital shifted from Licata to Agrigento on the 19th, where it was joined the following day by the holding unit of the 56th Medical Battalion from Licata. The 10th Field moved

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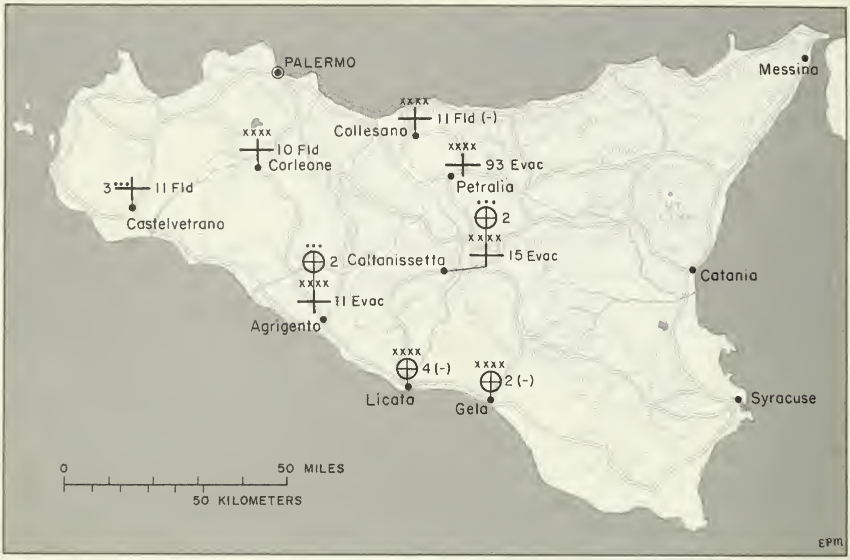
[8] Statement of Colonel Zehm to the author, 17 Aug 55.


PALERMO
Messina
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11 Fld (-)
Collesano
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Corleone
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93 Evac
Petralia
3
11 Fld
Castelvetrano
2
xxxx
15 Evac
2
Caltanissetta
Catania
xxxx
11 Evac
Agrigento
xxxx
4 (-)
xxxx
2 (-)
Licata
Gela
Syracuse
0
50 MILES
50 KILOMETERS
EPM

MAP 15—Seventh Army Hospitals, 26 July 1943

on to Corleone along the 3d Division's line of advance on the 22d, but forward elements of the division it supported were already in Palermo 25 miles away. The 11th Evacuation Hospital, supporting both prongs of the Provisional Corps' advance, did not move from Licata until 21 July, and then only to Agrigento, by that time 60 or more miles in the rear. (*Map 15*)

Following the conquest of western Sicily, gaps in the evacuation chain were quickly closed. A clearing platoon of the 3d Medical Battalion took over an Italian military hospital in Palermo the day the city fell; a clearing platoon of the 51st Medical Battalion arrived a day later; and on 27 July the newly landed 91st Evacuation Hospital opened in buildings of the University of Palermo Polyclinic Hospital.

II Corps, pushing northwest across central Sicily, matched the pace of the Provisional Corps. The drive began on 16 July, by which date the 45th Division had moved across the rear of the 1st to a position on the left flank of the corps sector. The three combat teams of the 45th then leapfrogged one another in a continuous advance to the northern coast of the island. A patrol made contact with the 3d Division in the outskirts of Palermo on the afternoon of 22 July. The following day the vital coast road was cut at Termini and Cefalù, and the 45th turned east toward Messina.

In a parallel advance, the 1st Division captured Enna, communications hub of

Sicily, on 20 July, and established contact with the Canadians on the right. Three days later the 1st was astride the Nicosia-Troina-Randazzo road, running east and west about twenty miles inland. Nicosia fell on the 28th and Cerami, less than ten miles from Troina, on the 30th. Between those two dates the 39th RCT of the 9th Division, recently withdrawn from the now quiet western sector, was attached to the 1st Division. By 31 July II Corps had reached and passed the boundary originally assigned to Seventh Army.

Medical support for II Corps in this phase of the campaign followed a normal, if accelerated, pattern. In hill fighting aid stations were kept from 100 to 300 yards behind the troops; on open ground they were 500 to 1,000 yards behind. The organic battalions were almost continuously in motion, backed by the corps battalion whose collecting-clearing companies bypassed each other to keep within 10 miles of the front. Hospital units moved less frequently, but in accordance with the same leapfrog pattern. The 11th Field opened at Pietraperzia in the center of the front and perhaps a third of the way across the island on 18 July. Two days later the 15th Evacuation was receiving patients at Caltanissetta, 10 miles farther north. July 22 saw a platoon of the 11th Field in operation 15 miles beyond Caltanissetta. The 93d Evacuation opened at Petralia on the Nicosia road on 25 July, while the 11th Field moved on to Collesano, less than 10 miles from the sea, the following day. (*See Map 15.*) The 128th Evacuation Hospital collected its scattered equipment and personnel in time to open at Cefalù on 31 July.

The Etna Line and Messina

While the Americans swept over western and central Sicily, the British were virtually stalled on the eastern coast where Mt. Etna rose steeply from the Catanian plain. The rugged northeastern corner of the island was ideally adapted to defense, with the escape port of Messina protected by a series of strongly fortified positions in contracting arcs. By the end of July, therefore, General Alexander abandoned his original strategy. Seventh Army was ordered to fight its way to Messina along the northern coast road, and to a junction with Eighth Army along the Troina-Randazzo road, which skirted the northern slopes of the classical volcano. The key to the Etna Line was Troina, a natural fortress-city built of stone on top of a rocky hill. The 1st Division, with the 39th RCT of the 9th, launched an assault against the position on 1 August, while the 3d Division relieved the 45th near San Stefano and prepared to attack the coastal anchor of the German line. The British hammered simultaneously at the right flank between Mt. Etna and the sea.[9]

The battle of Troina, lasting until 6 August, was the most bitterly contested of the campaign. Before it was over twenty-four separate counterattacks had been repulsed. The remaining regiments of the 9th Division were brought up early in the battle, with the 60th combat team executing a wide flanking movement to threaten the enemy's rear and the 47th leading the advance through the battered town to the next objective. Both 1st and 9th Divisions were slowed by difficult terrain and ex-

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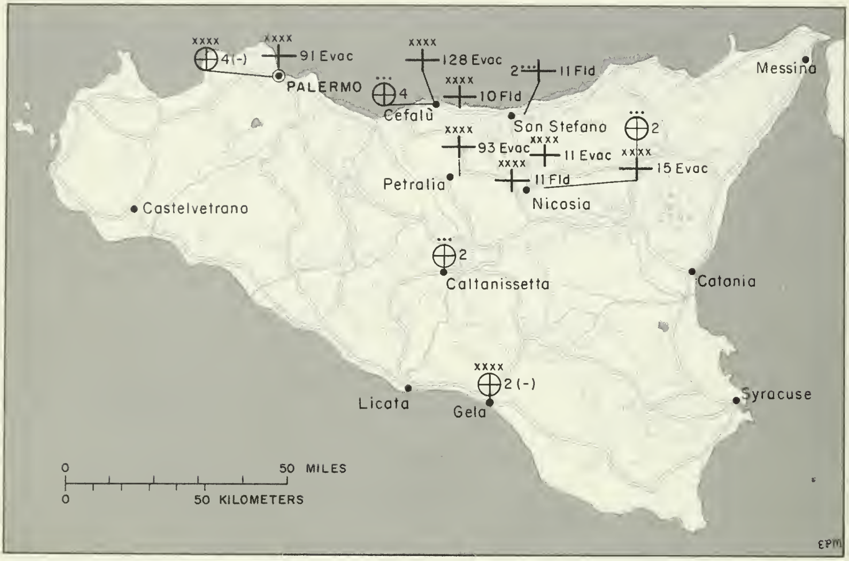
[9] See sources cited n. 7, p. 156, above.


4(-)
91 Evac
PALERMO
4
128 Evac
10 Fld
2
11 Fld
Messina
Cefalù
San Stefano
2
93 Evac
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15 Evac
11 Fld
Petralia
Nicosia
Castelvetrano
2
Caltanissetta
Catania
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Licata
Gela
Syracuse
0 50 MILES
0 50 KILOMETERS
EPM

MAP 16—Seventh Army Hospitals, 5 August 1943

tensive enemy demolitions, but met only nominal opposition after Troina.

The 3d Division, meanwhile, was encountering determined resistance. A strong enemy position on high ground around San Fratello was finally outflanked by an amphibious operation in the early morning of 8 August. A second seaborne landing behind enemy lines near Brolo on 11 August was less successful, but the beleaguered landing force was relieved the following day. A third leapfrog movement by sea on the night of 15–16 August, involving elements of the 45th Division, found resistance broken and the ground forces already beyond the point of the landing. Advance elements of the 3d Division entered Messina early on 17 August, preceding Eighth Army patrols by no more than an hour.

Medical units, including field and evacuation hospitals, followed closely behind the combat forces along the two lines of advance—so closely, in fact, that evacuation hospitals were sometimes ahead of clearing stations.[10] The heaviest concentration was in the vicinity of Nicosia, 5 to 15 miles behind the Troina front. The 15th Evacuation Hospital opened in this area on 1 August, as did two platoons of the 11th Field on the 3d. The 11th Evacuation was attached to II Corps and joined the group on 5 August. *(Map 16)* Over the next ten days,

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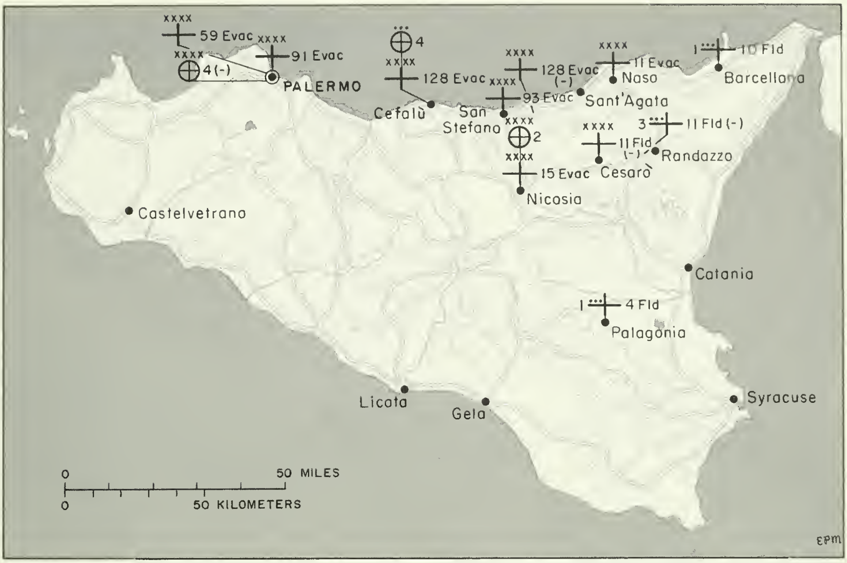
[10] Ltr, Lt Col Perrin H. Long, Med Consultant, to Surg, NATOUSA, 26 Aug 43, sub: Random Observations From EBS and Sicily, July 6th to August 14th 1943.


XXXX
59 Evac
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91 Evac
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PALERMO
4
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128 Evac
Cefalù
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(-)
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93 Evac
San
Stefano
XXXX
2
XXXX
15 Evac
Nicosia
XXXX
11 Evac
Naso
Sant'Agata
1
10 Fld
Barcellona
3
11 Fld (-)
XXXX
11 Fld
(-)
Randazzo
Cesarò
Castelvetrano
Catania
1
4 Fld
Palagonia
Licata
Gela
Syracuse
0
50 MILES
0
50 KILOMETERS
EPM

MAP 17—Seventh Army Hospitals, 15 August 1943

platoons of the 11th Field Hospital displaced one another forward to Cesarò and Randazzo. (*Map 17*) The 54th Medical Battalion and one company of the 51st operated along the same line of advance, clearing platoons being used during the battle of Troina to augment the facilities of the evacuation hospitals.

For the most part aid stations in the Troina sector were within 400 to 800 yards of the fighting and accessible to vehicles, though roads were often under enemy fire. Only the 60th Regimental Combat Team, circling the left flank over roadless mountains, experienced unusual difficulty in evacuation. Corps medical battalions supplied eighty additional litter bearers, while thirty more came from noncombat divisional units. Litter squads were stationed at intervals of 300 to 400 yards to relay casualties back to the stations. Mules requisitioned from local farmers were also used to carry litters, both in tandem between lance poles, as had been done in Tunisia, and by a device similar to the French *cacolet* whereby one mule carried two litters. Neither method was fully satisfactory but the *cacolet* was considerably less so than the tandem. The care and management of the animals fell to the 9th Division veterinarian and his assistants. The 47th RCT, operating east of Troina, had hand carries up to four miles, mainly because road demolitions prevented the use of vehicles.

Along the narrow and precipitous north coast road, the 3d Division was fighting what Ernie Pyle called a "bulldozer campaign," the pace of the advance being limited by the speed with which the engineers could repair the damage done by German demolitions. In this final drive the division was materially aided by a provisional mounted troop and a provisional mule pack train. In the two weeks between 3 and 16 August, 219 horses and 487 mules were used, of which 43 percent were listed as battle casualties. The animals were acquired by capture, requisition, and confiscation. Despite inexperienced handlers and improvised equipment, the expedient was credited by General Truscott, himself a former cavalry officer, with speeding the advance and reducing losses. The division veterinarian, Maj. Samuel L. Saylor, was responsible for care and provisioning of the animals, and helped train personnel to manage them.[11]

The 3d Division received medical support from the 10th Field Hospital, whose platoons leapfrogged one another from Cefalù to Barcellona, and from one platoon of the 11th Field. The 93d Evacuation Hospital moved to San Stefano on 7 August, and a week later the 11th Evacuation shifted from Nicosia to a position between San Fratello and Brolo. On the latter date, 14 August, the 128th Evacuation displaced half of its facilities and staff from Cefalù to Coronia some 8 miles east of San Stefano. (*See Map 17.*)

The most difficult evacuation problem encountered by the 3d Division was during the battle for San Fratello Ridge, where litter carries took from 5 to 7 hours. One patient was carried for 9 hours by 50 bearers in relays. Corps supplied 40 additional litter bearers, and Italian and Czechoslovak prisoners were also used. Some slightly wounded men were evacuated sitting on pack mules. The long litter carries were stopped when Colonel Churchill, the theater surgical consultant, concluded that the wounded suffered more from the journey than they would have by waiting. The last 52 casualties brought down from the ridge were left for 24 to 48 hours in the aid stations, while bulldozers cleared a road for the ambulances.[12]

The two amphibious landings in the 3d Division sector, both made by the 2d Battalion of the 30th Infantry, were supported by personnel of the battalion medical detachment, reinforced by medical and surgical technicians from the 54th Medical Battalion. In the Brolo operation of 11 August, where the landing force was ambushed by the Germans, a medical corpsman was killed and five wounded in action. The American wounded were treated by German doctors and left behind to be picked up by their own organizations when the enemy withdrew the next day.

Hospitalization and Evacuation

Hospitalization in the Combat Zone

Hospitalization in the Sicily campaign showed marked improvement over prac-

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[11] (1) Truscott, *Command Missions*, p. 230; (2) Vet Rpts, Sick and Wounded, Animals, 1943, 3d Div.

[12] Ltr, Col Churchill, Surgical Consultant, to Surg, NATOUSA, 19 Aug 43, sub: Tour Rpt, Sicily, D+24 to D+35.

Administering Plasma to Wounded Man *at 7th Infantry aid station, Sant'Agata.*

tices in Tunisia, even though preinvasion plans were not always carried out to the letter. With occasional exceptions resulting from rapid movement of the troops, each division clearing station under combat conditions had at least one field hospital unit adjacent to it and a 400-bed evacuation hospital within easy ambulance haul. Cases that could not stand the strain of further transportation went to the field hospitals, where surgery was performed as required by attached surgical teams. A majority of all those seriously wounded in Sicily received definitive treatment in these units. As soon as a patient needing further care could be safely moved, he was sent back to the nearest evacuation hospital. Patients still immobilized when a field hospital unit was ordered forward were left in charge of a small detachment that rejoined the parent unit as soon as all of its patients had been evacuated. Transportable cases at the division clearing stations, including most cases of disease, were sent directly to the evacuation hospitals, where they were held for treatment or evacuated to the North African com-

EVACUATION BY MULEBACK

munications zone, as circumstances dictated.[13]

The intermediate step visualized by the planners whereby one 750-bed evacuation hospital was to back up each two 400-bed units never materialized. Although 750-bed evacuation hospitals were to come on call and were repeatedly requested by Colonel Franklin, shipping space was at such a premium that only one reached Sicily before the end of the campaign. This was the 59th, which landed at Palermo on 6 August with much of its equipment still at sea. The hospital joined the 91st in buildings of the University of Palermo Polyclinic Hospital and was in operation by the 8th, but never functioned as planned. Its activities for the remaining ten days of the campaign were primarily those of a station hospital and holding unit for evacuation to Africa.

The complete absence of fixed hospitals, and the presence of only one evacuation hospital large enough to hold slightly wounded men and disease cases for return to duty, was made up in part by evacuating many short-term patients to Africa, and in part by enlarging the 400-bed units. During periods of heavy fighting, clearing platoons of the corps medical battalions were attached to the evacuation hospitals. Each clearing platoon so used was able to set up and operate five or six wards with its own equipment and staff, augmenting the capacity of the hospital by 100 to 200 beds. During the battle for Troina the 15th Evacuation Hospital expanded by this means to a total capacity of 950 beds.

In areas where the fighting had ceased and conditions were relatively stable, corps and army medical battalions operated holding hospitals for evacuation. One such unit, operated at Gela throughout the campaign by the 261st Amphibious Medical Battalion, also served as a station hospital for service and other troops in the area. A holding hospital set up by the 56th Medical Battalion functioned first at Licata, then at Agrigento, and finally at Termini on the north coast, where the entire unit was carried by air on 4 August. Loading required only twenty-one minutes, and the flight itself half an hour. The hospital was set up to receive fifty patients in less than four hours from the time loading began.[14]

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[13] *Ibid.* See also, Memo, Churchill to Surg, NATOUSA, 5 Sep 43, sub: Use of Field Hosps in Forward Surgery. General sources for hospitalization in the Sicilian campaign are: (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Rpt of Opns, U.S. Seventh Army in Sicilian Campaign, an. N; (3) Clift, Field Opns, pp. 193–95; (4) Surg, II Corps, Rpt of Med Activities, Sicilian Campaign; (5) Unit rpts of individual evacuation and field hosps and med bns mentioned in the text.

The 51st Medical Battalion operated holding hospitals at Castelvetrano and Palermo. At the latter site, the hospital was expanded to 400-bed capacity and was used also for malaria and jaundice convalescents. In another instance a division clearing company acted as a station hospital. This was a unit organic to the 82d Airborne Division, which took over an Italian military hospital in Trapani while the division performed occupation duties in western Sicily. The same company also set up a clearing station in Castelvetrano after other medical units had been withdrawn from that city.

The original 7-day evacuation policy was extended to ten days and eventually—for malaria cases—to two weeks before the campaign ended. During most of the period, however, no fixed policy was possible. Hospital facilities were so overcrowded that patients had to be evacuated as soon as they could be moved in order to make room for new ones. A 24-hour evacuation policy in front-line hospitals was not uncommon. Even those expected to return to duty within a week had to be removed to the rear in many instances, either to the 59th Evacuation at Palermo or out of Sicily altogether. As a result, a considerable number of patients were sent to North Africa who could have returned to duty if it had been possible to hold them on the island. Malaria cases, which outnumbered battle wounds despite atabrine therapy, and sandfly fever cases were often returned to their units for convalescence, simply to retain physical control of the men.

Some indication of the strain placed upon medical facilities in Sicily may be gathered from the statistics. With a maximum troop strength of approximately 200,000, and an average strength of approximately 166,000, U.S. hospital beds in Sicily probably never exceeded 5,000 during the period of fighting, even with generous allowance for those operated by clearing platoons. Between 10 July and 20 August 1943, a total of 20,734 American soldiers, 338 Allied, and 1,583 enemy troops were admitted to U.S. Army hospitals, with another 20,828 Americans admitted to quarters. Of the U.S. troops hospitalized, 13,320 were diseased, 5,106 had suffered battle wounds, and 2,308 cases were injuries. The quarters admissions included 14,635 cases of disease and 6,193 minor wounds and injuries. A further drain on hospital facilities came from the necessity of caring for a number of civilians who had no other means of treatment. Military patients discharged from U.S. hospitals in Sicily, including American and Allied troops returned to duty and prisoners transferred to the stockades, totaled 7,168.

All prisoners of war, except Italian medical personnel and chaplains and Italian soldiers of Sicilian birth who were paroled to their homes, were evacuated to North Africa as rapidly as possible. The medical officers and enlisted men retained in Sicily were used to care for sick and wounded prisoners in captured facilities and in Italian Red Cross hospitals, five of which were taken over by II Corps.

Two mobile Italian army hospitals were captured, in addition to a number

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[14] Ltr, Col Churchill to Surg, NATOUSA, 19 Aug 43, sub: Tour Rpt, Sicily, D+24 to D+35.

Holding Hospital Operated by the 56th Medical Battalion *adjacent to the Termini airfield.*

of civilian hospitals and other medical installations. The *304th Field Hospital,* captured on 30 July at Mistretta, had 400 beds, 60 of them occupied, and a staff of 8 officers and 46 enlisted men. Located in buildings, the hospital continued in operation under U.S. supervision. A larger Italian hospital, the *10th Reserve,* was taken near Barcellona on 15 August with 47 officers, 143 enlisted men, and 522 patients. This unit was in the area assigned for occupation by the British, and reverted almost immediately to British control. In addition to personnel of captured hospitals, large numbers of enemy medical personnel were captured with the field troops. Approximately 100 enemy medical enlisted men and a similar number of prisoners—all Italian—from among line troops, were used to augment the staffs of II Corps hospitals, while others were attached to the two evacuation hospitals in Palermo.

Evacuation

Evacuation within Sicily was controlled by the Seventh Army surgeon, who also arranged with the proper authorities for evacuation from the island. Hospital ships and carriers were under control of Allied Force Headquarters, and air evacuation was the responsibility of the Surgeon, North African Air Force Troop Carrier Command.[15]

Lines of evacuation shifted with the progress of the campaign. Until late July the bulk of those destined for the communications zone were carried by ambulance and truck to evacuation hospitals on the south coast. The 93d Evacuation served II Corps at Gela until 21 July, while the 11th Evacuation, at Licata until 20 July and at Agrigento between 22 July and 4 August, served the Provisional Corps. After 21 July, II Corps casualties also cleared through the 11th, by way of a rough 4-hour ambulance run from the 15th Evacuation at Caltanissetta. Soon after the capture of Palermo, that city became the focal point for evacuation to Africa, and II Corps casualties were moved north from Nicosia to enter a coastal chain of evacuation. A captured Italian hospital train, staffed by U.S. medical personnel, began running from Cefalú to Palermo on 1 August, the 128th Evacuation Hospital at Cefalù serving as holding unit. The system worked smoothly, despite a continuous shortage of ambulances and often badly damaged roads.

Evacuation from Sicily to North Africa was fairly evenly divided between sea and air. For the first four days of the campaign all evacuation was by returning troop carriers and LST's. Although plans called for the delivery of all these early casualties to Tunisian ports, many were carried to Algiers where base section facilities were inadequate to care for them.[16] Air evacuation began from fields around Gela and Licata on 14 July, but was unorganized, with both U.S. and British planes participating as they happened to be available. Approximately 100 casualties were flown out in this way, without medical attendants, before the 802d Medical Air Evacuation Transport Squadron took over on 16 July. Evacuation by hospital ship began from Gela on 15 July, from Scoglitti the following day, and from Licata on the 17th. Air evacuation began from Agrigento on 23 July, and one load was flown from Castelvetrano on the 24th. As the campaign shifted to the northeast, Palermo and Termini became the principal evacuation centers. Air evacuation began from Palermo on 27 July, and sea evacuation two days later, when the port was cleared. Air evacuation from Termini began 5 August. One planeload of patients was flown to Africa direct from San Stefano.

Between 10 July and 20 August a total of 5,391 patients were evacuated by sea and 5,967 by air—11,358 all told.[17]

Sea evacuation was by two American and three British hospital ships, with capacities ranging from 370 to 800 patients; and five British hospital carriers, each capable of moving between 350 and 400 patients. The larger ships were used to evacuate only from Palermo, where the harbor was deep enough to accommodate them. Even in Palermo, however, the condition of the docks did not permit direct loading. The U.S. vessels, *Acadia* and *Seminole*, carried no water ambulances. Litters were individually winched aboard from smaller craft in rhythm with the waves. By early August a regular schedule was in effect, a ship arriving in Palermo harbor at dawn every other day. For the most part American patients were routed to Bizerte, but at least one load was diverted to Oran and one load of 125 patients went to Tunis. The British hospital carriers, because of their shallow draft, were preferred for evacuation from beaches and small harbors. Each carried six water ambulances, which could be lifted to the deck for unloading.[18]

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[15] The main sources for this section are: (1) Rpt of Opns, U.S. Seventh Army in Sicilian Campaign, an. N; (2) Surg, II Corps, Rpt of Med Activities, Sicilian Campaign; (3) Annual Rpt, 54th Med Bn, 1943; (4) Annual Rpt, Med Sec, NATOUSA, 1943; (5) Annual Rpt, 91st Evac Hosp, 1943; (6) ETMD, NATOUSA, Jul 43; (7) Clift, Field Opns, pp. 195–97; (8) Col Criswell G. Blakeney, ed., *Logistical History of NATOUSA–MTOUSA* (Naples: G. Montanino, 1945), *passim.*

[16] Surg, NATOUSA, Journal, 16 July 1943. See also p. 196, below.

[17] The figures are from the 1943 annual reports of the Surgeon, Seventh Army, and the Surgeon, NATOUSA. Medical History, 802d MAETS, gives 6,170 for air evacuation, a figure that presumably includes Air Forces personnel and possibly some Allied personnel and civilians, none of whom are included by the Seventh Army surgeon. Colonel Elvins, Air Surgeon, Twelfth Air Force, in Report of Air Evacuation, 12 September 1943, gives 5,819 through 21 August. In relation to the total, these variations seem too minor to justify rejecting the official Army figure.

Air evacuation from Sicily followed the pattern developed in Tunisia, but was more highly organized. Medical authorities were notified in advance approximately when each new airfield would be usable, so that a holding hospital could be set up. Personnel of the 802d MAETS stationed at the fields passed on information as to available planes and arrival times, supervised loading, and provided attendants including nurses for each flight. These attendants were flown back to Sicily by Troop Carrier Command, but litters, blankets, and splints for property exchange came by ship. Most of the patients flown to Africa were landed at Mateur, but a few were routed to fields around Tunis. Where an evacuation hospital was close to the airfield, as at Palermo, the more serious cases were moved direct from hospital to plane, with only the walking and less urgent cases passing through the holding unit.

Medical Supplies and Equipment

While shortages of particular items occurred and there were occasional delays, medical supplies presented no serious problems in the Sicily Campaign. Approximately 110 dead-weight tons of medical supplies were landed on the beaches between D-day and D plus 2. These initial supply loads consisted of combat medical maintenance units, heavily augmented by items that experience in North Africa had shown to be required. Supplies not carried ashore by personnel of the medical units to which they belonged were unloaded wherever room to put them could be found. They were picked up by the beach group, which issued them as needed until medical supply depot personnel came ashore.[19]

In the landing phase a lack of co-ordination was evident. Some of the LST's did not carry litters, blankets and splints as called for in the medical plans for the operation, while other landing craft returned to their African bases without leaving their supplies of these items on the beaches. In the Scoglitti area medical supplies dumped on the beaches were so widely scattered that collecting them was a slow and difficult process. About 10 percent of the initial medical supply load was lost due to enemy action, while supplies on the follow-up convoys were poorly packed. Many boxes were only half filled and padded with straw; there was undue breakage of bottles; and some 20 percent of the packing lists did not agree with the contents of the boxes they accompanied.

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[18] (1) ETMD, NATO, for Jul 43, 11 Aug 43. (2) Edith A. Aynes, "The Hospital Ship Acadia," *American Journal of Nursing*, XLIV, (February 1944), 98–100. The carrier had a draft of only fourteen feet compared with twenty-five feet for the hospital ship. Although Oran was included as a port of debarkation for patients in the original planning, it was quickly abandoned in favor of the shorter route to Bizerte. See: (3) Ltr, Col William C. Munly (Ret) to Col Coates, 7 Nov 58, commenting on preliminary draft of this volume; (4) Ltr, Col Bauchspies to Col Coates, 15 Apr 59.

[19] Principal sources for this section are: (1) Rpt of Opns, U.S. Seventh Army in Sicilian Campaign, an. N; (2) Surg, II Corps, Rpt of Med Activities, Sicilian Campaign; (3) Rpt of Med Supply Activities, NATOUSA, Nov 42–Nov 43; app. K; (4) Davidson, Med Supply in MTOUSA, pp. 30–41; (5) Clift, Field Opns pp. 197–98.

Supplies, nevertheless, proved generally adequate, even in the early stages of the campaign, thanks to careful planning and advance requisitioning. Medical supplies and equipment estimated to be adequate for current maintenance plus a 30-day reserve were ordered months in advance of the assault and were delivered in batches by the successive follow-up convoys. Immediate shortages of such items as tincture of opium, hydrogen peroxide, litters, and cots were quickly overcome by emergency requisitions on base depots in North Africa, deliveries being made by air if the need was urgent. The only articles that could not be immediately procured were items of replacement equipment and certain equipment items over and above those normally allowed, which had been authorized but could not be procured before leaving Africa.

Two supply depot units distributed medical supplies in Sicily. An advance detachment of the 4th Medical Supply Depot went ashore at Licata with the Joss Force on D plus 2; the 1st Advance Section of the 2d Medical Supply Depot landed at Gela with the CENT Force the following day.

The detachment of the 4th Medical Supply Depot established a distribution point at Licata, then on 27 July set up a base depot for the island at Palermo. On 30 July an advance dump to serve the 3d Division fighting along the northern coast road was set up in Cefalù, the Licata dump being closed on 1 August. The Cefalù dump remained in operation until 25 August, a week after the end of hostilities.

The 1st Advance Section of the 2d Medical Supply Depot established its first distribution point at Gela, stocked with supplies collected from the beach group and from the beaches themselves, where boxes had been dumped as they were taken from the ships. Trucks used were borrowed from the 1st Medical Battalion, since the supply depot's own vehicles were not yet unloaded. A forward issue point was set up at Caltanissetta on 21 July in a captured Italian medical depot. A small dump was also operated by this unit at Agrigento between 22 July and 31 July. Personnel from Agrigento established an advance depot at Nicosia on 2 August, where they were joined on 12 August by personnel of the Gela depot, which was closed at that time. Personnel of the Caltanissetta depot also moved to Nicosia early in August, leaving one officer and three enlisted men to operate the Italian depot until it could be transferred to the Allied Military Government organization. The Nicosia depot remained in operation until 27 August.

The Licata depot was reopened on 24

August by personnel of the 1st Advance Section, 2d Medical Supply Depot, and operated until 21 October, serving evacuation hospitals and troops bivouacked in the area. All personnel of the 2d Medical Supply Depot in Sicily then moved to Palermo, relieving the advance detachment of the 4th for service in Italy.

In the course of the campaign, 365 tons of medical supplies and 60 tons of field hospital equipment were captured. This material was used to resupply civilian, Red Cross, and captured military hospitals.

Professional Services

Combat Medicine and Surgery

While the problems encountered by the Medical Department in Sicily were in some respects merely an extension of those already familiar in Tunisia, in other respects they were unique. Lack of sanitation, scarcity of potable water, a vermin-infested and undernourished population, and inhospitable terrain were an old story to American medical personnel by the summer of 1943, but the problems of a large-scale amphibious operation and the hazards of the malaria season were new. Sicily was at once a proving ground for the lessons learned in Africa and a dress rehearsal for Italy.

Front-Line Surgery—In the Sicily Campaign organization and facilities for front-line surgery were greatly improved over those of the Tunisia Campaign. The most important single development was the use of field hospital platoons, with attached surgical teams, for treatment of nontransportable casualties in the division area. Despite careful analysis of Tunisian experience and a full explanation of the preferred procedure in a circular letter from the theater surgeon a month before the invasion, however, various difficulties were still encountered. Field hospital commanders were reluctant to undertake dispersed operation by platoons, and were generally unfamiliar with the technique of functioning in that manner. There was also some resistance to accepting the attachment of surgical teams, as implying some degree of reflection on the competence of the regular hospital staff.[20]

As a result, the auxiliary teams were not used as effectively as they might have been. Many teams continued to work in clearing stations, where they were handicapped as they had been in Tunisia by lack of equipment and absence of facilities for postoperative care. Still other teams were required to work in the 400-bed evacuation hospitals, because these units were not adequately staffed in the subspecialties. This diversion of surgical teams was a direct consequence of the failure to get 750-bed evacuation hospitals to the island in time to carry a share of the combat load. Another problem arose from the fact that many of the surgical teams employed, as well as the field hospitals themselves, had little or no previous combat experience, and sur-

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[20] Sources for this section are: (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Surg, NATOUSA, Cir Ltr No. 18, 14 Jun 43, sub: Forward Surgery and Aux Surg Teams; (3) Surg, II Corps, Cir Ltr No. 3, 7 Aug 43, sub: Care of the Wounded in Sicily; (4) Memo, Churchill to Surg, NATOUSA, 5 Sep 43, sub: Use of Field Hosps in Forward Surgery; (5) Ltr, Col Long to Surg, NATOUSA, 26 Aug 43, sub: Random Observations from EBS and Sicily, July 6th to August 14th 1943; (6) Annual Rpt, 2d Aux Surg Gp, 1943; (7) Clifford L. Graves, *Front Line Surgeons* (San Diego [privately printed] 1950), pp. 86–87.

Forward Surgical Unit, *2d Platoon, 11th Field Hospital, near Nicosia.*

geons were unfamiliar with general policies as to the management of wounds.

In addition to the employment of field hospital platoons as forward surgical units, extensive use was made of surgical consultants during the campaign. II Corps had the services of its own surgical consultant, Major Snyder, detached from the 77th Evacuation Hospital, while Colonel Churchill, the theater consultant in surgery, served unofficially in a similar capacity with Seventh Army. Colonel Churchill spent more than half of his time in Sicily during the period of active hostilities.

Neuropsychiatric Reactions—The basic principle worked out in Tunisia of treating psychiatric reactions in the combat zone was the policy laid down for Sicily.[21] In the early stages of the campaign, however, owing to the normal confusion consequent upon rapid movement, many cases did not go through the evacuation hospitals for triage [22] but were evacuated to North Africa from the clearing stations with no treatment except sedation. Of those that did reach the evacuation hospitals, many had been three or four days in getting there, a delay that served only to fix the symptoms and make treatment more difficult. As a result, only 15 percent were returned to duty.[23]

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[21] Surg, NATOUSA, Cir Ltr No. 17, 12 Jun 43, sub: Neuropsychiatric Treatment in the Combat Zone.

[22] Triage is the process of sorting casualties by type of wound or disease and by urgency. See pp. 3–4, above.

Later in the campaign, after the evacuation system had become more stabilized, half of all psychiatric cases were returned to full combat duty. For the campaign as a whole, 39 percent went back to the lines. Sicilian experience thus reinforced the conclusions of North Africa that treatment of psychiatric reactions must begin at once and that patients must be retained in the combat zone if they were to have a reasonable chance of returning to duty.

The most publicized psychiatric case in Sicily was that of a soldier slapped by General Patton in the receiving tent of the 93d Evacuation Hospital at San Stefano on 10 August. There had been a similar incident in which Patton had cursed and struck with his gloves a patient with a clearing station diagnosis of "psychoneurosis anxiety state." Patton's motivation in these cases was the sincere, if mistaken, belief that if he could make the men angry enough with him they would redeem themselves.[24] The incidents were investigated by Brig. Gen. Frederick A. Blesse, Surgeon, North African Theater of Operations, U.S. Army (NATOUSA), and Patton apologized to all concerned. Without in any way attempting to extenuate his actions, it should be noted that Patton himself was probably suffering from the accumulated tensions of the preceding weeks of intensive combat. He was on his way back from the front, where every available man was needed, when he stopped at the 93d Evacuation Hospital on 10 August, and was told by an apparently able-bodied man that he was not wounded but only scared.[25]

Diseases of Special Interest—In Sicily the American soldier encountered varieties of subtropical diseases for which not even his experience in North Africa had prepared him. The island harbored flies, fleas, lice, bedbugs, and mosquitoes. Local water and food supplies were likely to be contaminated. Even elementary sanitation seemed unknown to the local population. Dysentery, sandfly fever, and most of all, malaria, were constant threats.[26]

Preventive measures included immunization of all personnel destined for Sicily against smallpox, typhoid, paratyphoid, typhus, and tetanus. Atabrine was distributed with rations four times weekly beginning on 22 April, with quinine substituted for flying personnel and for those sensitive to atabrine. There was intensive indoctrination on sanitary measures before embarkation, with stress on food and water supplies and waste disposal.

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[23] Annual Rpt, Med Sec, NATOUSA, 1943.

[24] (1) Memo, Patton to Corps, Div, and Separate Brigade Commanders, 5 Aug 43. (2) Ltr, Col Franklin to Col Coates, 10 Nov 58, commenting on preliminary draft of this volume.

[25] The incidents have been fully documented. First-hand accounts are in two memorandums from Col. Donald E. Currier, commanding officer of the 93d Evacuation Hospital, one dated 12 August 1943 and addressed to the Surgeon, II Corps; the other dated 7 September 1943 and addressed to the Inspector General, NATOUSA. The official position is stated in letter, Henry L. Stimson, Secretary of War, to Senator Robert R. Reynolds, 3 December 1943; and in General Eisenhower's report to the Senate Committee on Military Affairs, dated 26 November 1943. For more personal accounts, see (1) Eisenhower, *Crusade* in Europe, pp. 179–83; (2) Bradley, *A Soldier's Story,* pp. 160–61; Capt. Harry C. Butcher, USNR, *My Three Years with Eisenhower* (New York: Simon and Schuster, 1946), pp. 390–91, 393, 396, 450; (3) Garland and Smyth, *Sicily and the Surrender of Italy,* pp. 425–31.

[26] General sources for this section are: (1) Rpt of Opns, U.S. Seventh Army in Sicilian Campaign, an. N; (2) Annual Rpt, Surg, Seventh Army, 1943; (3) Surg, II Corps, Rpt of Med Activities, Sicilian Campaign; (4) Annual Rpt, Med Sec, NATOUSA, 1943.

On the whole, these preventive measures were effective, except for malaria. There discipline broke down in what was essentially a command problem, and the disease became one of the major hazards of the campaign.

The reasons were various. Of the two malaria control units and one survey unit earmarked for Seventh Army, only one arrived before the end of hostilities. This was the 20th Malaria Control Unit, which landed on D plus 4, but could do little of an effective nature while the army was moving at a rate of ten to thirty-five miles a day. There were undoubtedly times when adequate supplies of atabrine did not reach all troop units, but the greater failure was on the part of the men themselves, who found ways to avoid taking the atabrine when issued, and on the part of the command that permitted the laxity. To most Americans, malaria was not a reality. The Tunisia Campaign had ended before the season started, and experience with the disease was strictly limited. Some cases were also breakthroughs of therapy, since the proper dosage was not well understood. It was stepped up from four to seven times a week on 12 August, with supervision to ensure that the drug was taken, but by that time the damage was already done.

The Seventh Army surgeon reported 4,480 cases of malaria and 6,172 cases of "fever undetermined origin" for the 7-week period 10 July–20 August, as compared with 5,106 combat wounds. The larger portion of the FUO cases were believed to be sandfly fever, more correctly known as pappataci fever, and the bulk of the remainder was probably malaria. American doctors were generally unfamiliar with both diseases in their civilian experience, and many faulty diagnoses were inevitable under combat conditions such as those found in Sicily. Revised figures based on later study of the records placed the Seventh Army malaria cases at 9,892 for the period 9 July–10 September, compared with 8,375 battle casualties. Eighth Army, occupying the highly malarious Catanian plain, had 11,590 malaria cases in the same period.[27]

Dental Service

Dental service in the Sicily Campaign also showed considerable improvement over that in Tunisia. Both 10th and 11th Field Hospitals were equipped to do prosthetic dental work, supplementing the facilities of corps and division medical battalions. A team consisting of one prosthetic operator and two assistants, with its own equipment and tentage, was set up by II Corps to visit all corps troop units where the number of cases was sufficient to justify the procedure. Rest periods for combat troops were short, however, and so prosthetic work while hostilities were actually in progress was mainly confined to repairs.[28]

At the end of the campaign, two dental officers from the 11th Field Hospital were placed on detached service with the 9th Division to catch up on general operative work, particularly in the division artillery, which was too large to be adequately cared for by the single dental officer assigned. The 1st Division at this time set up its own prosthetic clinic and laboratory in conjunction with the division clearing station. In September personnel and facilities for carrying on prosthetic work were installed in the 91st Evacuation Hospital at Palermo.[29]

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[27] (1) Rpt of Opns, U.S. Seventh Army in Sicilian Campaign, an. N. (2) Ltr, AG–AFHQ, to CinC, 15th Army Gp, and others, 6 Nov 43, sub: Malaria in the Sicilian Campaign, 9 Jul–10 Sep 43. The battle casualty figure in the AG letter includes slightly wounded cases treated in quarters as well as the 5,106 hospital cases noted in the Surgeon's report. See also, Lt Col William A. Reilly, Sandfly Fever in the 59th Evacuation Hospital.

[28] (1) Surg, II Corps, Rpt of Med Activities in Sicilian Campaign.

As had been the case in Tunisia, dental officers and enlisted men performed numerous nonprofessional functions during combat operations, when conditions made it impossible to carry on dental work.

Veterinary Service

Two veterinary food inspection detachments accompanied Seventh Army to Sicily, performing routine inspections of rations and of captured food supplies. One detachment operated a cold storage and refrigeration plant in Palermo during the latter part of the campaign. Care of animals was a function of the veterinary service at the division level, primarily in the 3d Division, which boasted both a provisional cavalry troop and a provisional pack train, and in the 9th Division where mules were used to carry supplies and to evacuate wounded. No hospital facilities for animals were available.[30]

Medical Support in the Seizure of Sardinia and Corsica

The island of Sardinia had been deliberately bypassed in planning Mediterranean operations, and the threat it had once held against Allied supply lines had been largely neutralized by the conquest of Sicily. The invasion of Italy by the British Eighth Army on 2 September, and the Salerno landings a week later, once more changed the picture. Once substantial forces were committed to a campaign in Italy, the strategic positions of both Sardinia and Corsica could not be overlooked.

The fact that no American or British ground forces were available proved no barrier to conquest. With the Italian Fleet no longer at their disposal, the German garrison on Sardinia was virtually isolated. The two Italian divisions on the island needed only a minimum of naval support to rout their former Axis partners, and within ten days of the Salerno landings the Germans had fled to Corsica. In a parallel movement directed from Algiers, the French underground on Corsica seized the island capital of Ajaccio three hours after word of the Italian surrender—announced the night of 8 September—was received. In Corsica the Germans made a more determined stand, but the 80,000 Italian troops quickly surrendered while French reinforcements were brought in from Africa. With the aid of Allied sea and air power, the last German had been expelled by 5 October.[31]

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[29] (1) Annual Rpt, Surg, 9th Div, 1943. (2) Annual Rpt, Surg, 1st Div, 1943. (3) MS, Dental History, MTO.

[30] (1) Med Hist, 3d Div, 1943. (2) Annual Rpt, Surg, 9th Div, 1943. (3) MS, Veterinary History, MTO.

[31] (1) Lt. (jg) S. Peter Karlow, USNR, Notes on Corsica, OSS Rpt, 15 Nov 43, Navy: S. E. Morison file. (2) Lt. Harold Wright, USMCR, "The Trojan Sea Horse," *Sea Power* (April 1946).

Provisional Pack Train of 3d Division Veterinarian in Sicily

No Army medical units took part in the seizure of Sardinia or Corsica, both operations being confined, so far as U.S. troops were concerned, to Air Forces personnel. The first hospitals to move into these islands were therefore assigned to the Army Air Forces. The hospitals initially selected were the 60th Station, a 250-bed unit that had been operating at Tunis since July, and the 15th Field, recalled from the Middle East.[32]

In the interest of speed, equipment of the 60th Station Hospital was loaded on trucks, which were driven onto LST's, ferried to Cagliari on the southern end of Sardinia, and before unloading were moved directly to the modern Italian hospital building that was to house the 60th. Nurses were flown to Cagliari in combat planes, the rest of the personnel going with the equipment by LST. The hospital opened with 500 beds—double its Table of Organization capacity—on 3 November 1943.

The 15th Field Hospital was somewhat later in getting into operation. The 2d Platoon opened 100 beds at Bastia, on the east coast of the Corsican panhandle, on 1 December; the 3d was established near Alghero in northwestern Sardinia on the 13th of that month. The 1st Platoon, which lost most of its equipment when the LST carrying it was beached due to enemy action, was not ready to receive patients at Ajaccio until 19 January 1944, after a base section had been established on the island.[33]

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[32] For details of the assignment of hospitals to the Air Forces, see p. 182, below. The remainder of this section is based on: (1) Med Hist, Twelfth Air Force, 1942–44; (2) Annual Rpt, 60th Sta Hosp, 1943; (3) Annual Rpt, 15th Field Hosp, 1943.

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[33] See p. 199, below.

CHAPTER V

The North African Communications Zone

Theater Organization

The Medical Section, AFHQ and NATOUSA

Allied Force Headquarters moved from Gibraltar, from which the landing operations for TORCH had been directed, to Algiers on 25 November 1942. Key staff members were already in Africa, including the ranking U.S. medical officer, Colonel Corby, but the bulk of the personnel of the various staff sections did not come from England until December and January. Personnel of the U.S. component of the medical section arrived aboard a destroyer on 23 December, two days after their ship had been torpedoed and sunk off Oran.[1]

The section functioned no more smoothly in Algiers than it had in London. Under the British concept, the Director of Medical Services, Maj. Gen. Ernest M. Cowell, was responsible for the administration of all medical activities in the theater. American practice made the surgeon at each echelon responsible to the commanding general of his formation. This doctrinal divergence was aggravated by personal friction between Cowell and Corby, his American deputy.[2]

An additional complication was introduced in December when Colonel Kenner, the Western Task Force surgeon, became a brigadier general. Cowell had been promoted to major general in November, so that his seniority was not jeopardized, but Corby's position became increasingly difficult. General Kenner, who now had too much rank for a task force surgeon, was attached to AFHQ as medical inspector, with authority so broad that he functioned in fact as inspector general for the theater commander, General Eisenhower. In this capacity, he exercised varying degrees of control over both Corby and Cowell.

The staff of the American component of the medical section, like other U.S. elements in AFHQ, was inexperienced in meeting the demands of a combat situation and was quickly bogged down in a welter of operational detail not contemplated in the preinvasion planning. The four officers and four enlisted men assigned were unable to establish any effective control over Army medical service in North Africa, or to carry out responsibility for hospitalization, evacuation, and supply. Neither could they exercise any decisive influence on Allied policy, since they were consistently outnumbered and outranked by their better informed British counterparts. Personnel were attached from subordinate units to make up the minimum strength required, but there was no way to compensate for the fact that the British held higher ranks and received intelligence information not available to the U.S. component.[3]

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[1] Ltr, Gen Standlee to Col Coates, 15 Jan 59, commenting on preliminary draft of this volume.

[2] (1) Hist of AFHQ, pp. 66, 538. (2) Ltr, Gen Snyder to Inspector General, 8 Feb. 43, sub: Inspection of Med Serv Eastern Sector, Western Theater of North Africa. Throughout this chapter the author is indebted to Armfield, *Organization and Administration*, pp. 245–301.

These difficulties were resolved only when a strictly American theater was created to handle all purely American affairs. For purposes of the invasion, North Africa had been considered a part of the European Theater of Operations, whose boundaries had been extended south to the Tropic of Cancer and east into Libya. Once AFHQ was set up on African soil, however, and supplies began to come directly from the United States, the ETO connection ceased to serve any useful purpose. It was severed entirely early in February 1943 with the establishment of the North African Theater of Operations, United States Army (NATOUSA).[4]

General Cowell

Under the new arrangement, Eisenhower became American theater commander as well as Allied Commander in Chief, and the senior United States officer of each AFHQ staff section, including the medical section, became chief of the corresponding segment of NATOUSA. This administrative reorganization paralleled the command changes on the Tunisian front, whereby II Corps was given its own combat mission and its own battle sector.[5] It also offered an opportunity to resolve the internal difficulties of the AFHQ medical section. On 4 February, the date of the activation of NATOUSA, General Kenner replaced Colonel Corby as Deputy Director of Medical Services—Deputy Chief Surgeon, AFHQ, in American terminology—becoming at the same time Surgeon, NATOUSA, with Colonel Standlee, Corby's executive officer, as his deputy. General Kenner also retained his functions as medical inspector.

Except for broad policy matters, the American medical service in the Mediterranean was exempt from British control after 4 February 1943. Thereafter the U.S. component of the AFHQ medical section functioned primarily in its NATOUSA capacity, having administrative and operational supervision over all U.S. Army medical services in the theater.

For another three months the medical

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[3] (1) Annual Rpt, Med Sec, NATOUSA, 1943. (2) 1st Lt Kenneth W. Munden, MS, Administration of the Medical Department in the Mediterranean Theater of Operations, United States Army, pp. 21–22. (3) Ltr, Gen Standlee to Col Coates, cited above.

[4] Hist of AFHQ, pp. 183–84.

[5] See pp. 123–24, above.

section continued to operate on a shoestring. The original four officers and four enlisted men who made up the American medical staff of AFHQ had been increased by one in each category by the time NATOUSA came into existence, but that was all. With the Tunisia Campaign in full swing and a steady stream of casualties flowing back to the communications zone, the 10-man staff of the medical section worked without regard to hours.

It was late in March before a plan of organization, prepared by Colonel Standlee, was presented, and a month later before it was approved. The plan called for four operating subsections: administration; preventive medicine; operations and planning, further divided into hospitalization, evacuation, and training; and consultants. The personnel requirements were 23 officers and 30 enlisted men.[6]

While the organization was being worked out, General Kenner left the theater on 23 March for another assignment. He was replaced on 16 April by General Blesse, surgeon of Fifth Army, which was then training in western Algeria. General Blesse had been detailed to NATOUSA headquarters during March. Like Kenner, Blesse performed the function of Deputy Surgeon and Medical Inspector, AFHQ, as well as those of Surgeon, NATOUSA. His relations with General Cowell were good, and close cooperation between the British and American staffs continued, even after the two groups moved into separate offices in June.[7]

As the theater expanded during 1943, new subsections were added to the medical section, and personnel increased correspondingly. In addition to close liasion with the major theater commands, the other staff sections of the North African theater headquarters, and the British, coordination with the medical service of the French Army also became necessary as French combat units began to participate in the Italian campaign. Representatives of the American, British, and French medical services met in Oran in November, and thereafter the consulting surgeon of the French Army made frequent visits to the office of the Chief Surgeon, NATOUSA.

With the growth of the theater and the increasing dispersion of medical units, more formalized means of communication became necessary. A series of circular letters, initiated in March, provided instructions on theater medical policy and approved technical procedures for the various medical installations. Beginning in July, theater medical experience was detailed in monthly Essential Technical Medical Data reports, or ETMD's, prepared for the Surgeon General but serving to bring together a wide variety of information of use within the theater. A professional journal, the *Medical Bulletin of the North African Theater of Operations,* began monthly publication in January 1944.

The North African Base Sections

By the time NATOUSA was set up early in February 1943, two U.S. base

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[6] (1) Annual Rpt, NATOUSA, 1943. (2) Munden, Administration of Med Dept in MTOUSA, pp. 30–46. (3) Intervs, with Gen Kenner and Gen Standlee, 10 Jan 52.

[7] Memo, Brig Gen Fred W. Rankin to TSG, 2 Nov 43, Sub: Remarks on Recent Trip Accompanying Senatorial Party.

General Blesse

sections were already operating in the theater. The first in point of time, as well as the longest lived, was the Mediterranean Base Section (MBS), with headquarters in Oran. Made up originally of Services of Supply elements attached to the Center Task Force, MBS was activated on 8 December 1942. Its medical section was headed by Lt. Col. (later Col.) Howard J. Hutter, who served until December 1943. Col. John G. Strohm, commanding officer of the 46th General Hospital, acted as MBS surgeon until March 1944, when he was succeeded by Col. Harry A. Bishop. The section boasted 20 officers, 1 nurse, and 31 enlisted men by the beginning of 1943, expanding thereafter as circumstances required. A subdivision of the Mediterranean Base Section, known as the Center District, was set up in Algiers on 7 June 1943, its initial medical staff consisting of Lt. Col. Joseph P. Franklin, surgeon, and 3 enlisted men. Beginning in March 1944 no surgeon was assigned to the Center District other than the MBS surgeon.[8]

The second North African base section to be established was the Atlantic Base Section (ABS), activated at Casablanca 30 December 1942. Again the section was built around SOS elements that had accompanied the task force. The ABS medical section included ten officers and four enlisted men. The surgeon was Col. (later Maj. Gen.) Guy B. Denit, who was recalled to the zone of interior in April en route to the Pacific. He was succeeded by his deputy, Lt. Col. (later Col.) Vinnie H. Jeffress, who joined the group preparing a communications zone organization for the coming invasion of Italy in August. At that time Col. Burgh S. Burnet became ABS surgeon. Colonel Burnet was replaced in January 1944 by Col. Thomas R. Goethals, who combined the duties of base surgeon—by that date greatly diminished—with those of commanding officer of the 6th General Hospital.[9]

Both base sections were placed under the jurisdiction of AFHQ on 30 December 1942, but in the absence of effective supervision both developed more or less independently until brought under the NATOUSA organization in February.

The last of the base sections in North Africa proper, the Eastern Base Section (EBS), was established 13 February 1943 and activated a week later, at Constantine in northwestern Algeria, to meet the need for an American base closer to the Tunisian combat zone. The EBS surgeon was Lt. Col. (later Col.) William L. Spaulding, whose original staff consisted of five officers and seven enlisted men drawn from MBS and ABS. With the extension of the war in the Mediterranean, the Eastern Base Section became the largest and most important of the three by virtue of its greater proximity to Sicily and Italy, and a man of more rank and experience than Spaulding then possessed seemed needed. Col. Myron P. Rudolph, the man General Blesse selected for the job, became EBS surgeon in July 1943. Headquarters was moved to Mateur immediately after the end of the Tunisia Campaign, and to Bizerte in August.[10]

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[8] (1) Annual Rpts, Med Sec, MBS, 1943, 1944. (2) Annual Rpt, Med Sec, Center Dist, MBS, 1943.

[9] Annual Rpts, Med Sec, ABS, 1943, 1944.

As of 6 October 1943, the boundaries of the various base sections were shifted to conform to territorial borders, ABS being made contiguous with French Morocco, MBS with Algeria, and EBS with Tunisia.

On 1 September 1943, two weeks after the successful conclusion of the Sicily Campaign, an Island Base Section (IBS) was activated at Palermo. Like the base sections in Africa, IBS was responsible to NATOUSA. Its medical section was headed by Lt. Col. (later Col.) Lewis W. Kirkman, who had come direct from the zone of interior. Boundaries were drawn to include only those portions of Sicily still being used by U.S. forces: the Palermo-Termini area, the Agrigento–Porto Empedocle area, Licata, and Caltanisetta.[11]

By the end of 1943, preliminary plans for an invasion of southern France were being drawn up at Seventh Army's new headquarters in Algiers, and Corsica, by accident of geography, assumed more importance in Allied strategy. A Northern Base Section (NORBS), confined to that island, was accordingly established on 1 January 1944. The NORBS surgeon was Lt. Col. (later Col.) Albert H. Robinson, formerly deputy surgeon of ABS.[12]

The base section surgeons were responsible to the base section commanders, but their policies were determined and their work supervised by the theater surgeon, and their offices were generally organized along a line closely paralleling the organization of the NATOUSA medical section. Only in their medical supply activities, which were directly under the Services of Supply, were they exempt from control by the theater surgeon, and even here close co-ordination existed.

Air Forces Medical Organization

The Army Air Forces in the Mediterranean had its own medical organization, distinct from that of the theater but operating in harmony with it. Col. Elvins, surgeon of the Twelfth Air Force, set up his office at Tafaraoui airfield near Oran two days after the Center Task Force landings, moving to Algiers on 19 November 1942. Under Colonel Elvins, in addition to his own headquarters, were medical sections for the Bomber Command, the Fighter Command, the Air Service Command, and the Troop Carrier Wing. Medical supply and veterinary (food inspection) functions were under the Air Service Command, which had subheadquarters, each with a small medical section, at Casablanca, Oran, and Constantine.[13]

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[10] (1) Annual Rpt, Med Sec, EBS, 1943. (2) Surg, NATOUSA, Journal, 12, 16, 17 Jul 43.

[11] Annual Rpt, Med Sec, NATOUSA, 1943. No reports of the IBS itself have been located.

[12] (1) Annual Rpt, Med Sec, NATOUSA, 1944. (2) Annual Rpt, Med Sec, NORBS, 1944.

A reorganization in December 1942 merged the Twelfth Air Force with British and French air units to form the Northwest African Air Forces (NAAF), but the medical organization remained substantially unchanged. The Twelfth Air Force again became a separate unit just before the invasion of Italy in September 1943, though it continued to be under the operational control of the NAAF. After capture of the great Foggia air base in southern Italy in early October, the Twelfth was reconstituted as a tactical force and a new heavy-bomber group, the Fifteenth United States Air Force, was activated. Both forces were subordinated to a new U.S. air command at the theater level—the Army Air Forces, Mediterranean Theater of Operations—in January 1944. An Air Service Command, Mediterranean Theater of Operations, was established at the same time, and both were brought under control of the Mediterranean Allied Air Forces, which superseded the NAAF. Headquarters of all major U.S. air units except the North African Wing of the Air Transport Command were in Italy by this time.[14]

Experience in North Africa, where Air Forces personnel were dependent on base section installations for fixed hospitalization, demonstrated a need for attaching a minimum number of fixed beds directly to the Air Forces as the Mediterranean campaign expanded. Air bases were often remote from hospitals located near concentrations of ground troops, yet Air Forces personnel were no less subject to disease and suffered casualties commensurate with an increasing tempo of activity. It was therefore agreed in October 1943 between General Blesse and Colonel Elvins that fixed hospitals should be attached to Air Forces units operating in southern Italy and from the newly occupied islands of Sardinia and Corsica.

Hospitalization in the Communications Zone

While the North African campaign was still in the planning stage, The Surgeon General had recommended a fixed-bed ratio of 12 percent of troop strength, on the basis of World War I experience. British experts on military medicine believed 6 percent would be adequate in terms of their own combat experience up to that date. Colonel Corby asked for fixed beds for 10 percent of the command, with a minimum ratio of 8 percent. The British basis was adopted, with many misgivings, simply because it was believed that shipping space for more beds would not be available.[15]

Hospitalization During the Tunisia Campaign

Fighting incidental to the landings in North Africa was over and the build-up for the campaign in Tunisia was well under way before any fixed hospitals arrived in the theater. With the single exception of the 48th Surgical, attached to the Center Task Force, even the mobile units arrived too late to be used in the assault phase and were therefore employed initially as fixed hospitals.[16]

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[13] (1) Hist, Twelfth Air Force Med Sec, 1942–44. (2) Link and Coleman, *Medical Support of the Army Air Forces in World War II*, ch. VI.

[14] Air Forces medical organization subsequent to January 1944 is treated in connection with the Italian communications zone. See pp. 326–27, below.

[15] (1) Ltr, Col Corby to Gen Cowell, 1 Jan 43. (2) Zelen, Hospitalization and Evacuation in MTOUSA, pp. 10, 21. For more detailed discussion of bed ratios, see Smith, *Hospitalization and Evacuation, Zone of Interior*, pp. 215–18.

Atlantic Base Section—Remote as it was from the combat zone, the Atlantic Base Section was the first to achieve relative stability in its hospital program. For the most part hospitals were sited in existing buildings and remained in place for considerable periods of time. Casualties received were mainly cases evacuated from other base sections for further treatment, or en route to the zone of interior.[17]

When ABS took over responsibility from the Western Task Force at the end of 1942 there were three evacuation hospitals functioning in the area as fixed units, with an aggregate T/O strength of 1,900 beds. A minimum number of additional beds, probably not exceeding 25, were available in a provisional hospital at Safi. Another 400-bed evacuation hospital, the 11th, and the 51st Station Hospital with 250 beds, were in the area but not yet operating. *(Map 18)*

The 51st Station Hospital went into operation in Rabat on 31 January 1943, while the 6th General, with 1,000 beds, arrived in Casablanca on 20 February and opened in that city a week later. Both of these hospitals occupied school buildings. Arrangements were also completed in February for a 25-bed provisional hospital at Marrakech to serve Air Forces units stationed in that vicinity, although the hospital did not open until 15 March. The Marrakech hospital occupied one wing of a French hospital building. It was initially staffed by a team of the 2d Auxiliary Surgical Group, withdrawn at that time from Safi, but was taken over in June by a detachment from the 56th Station Hospital, supplemented as occasion required by personnel on temporary duty from the 6th General Hospital. Early in August 1944 the Marrakech unit was redesignated the 370th Station Hospital.

The 69th Station Hospital began operating 500 beds at Casablanca on 28 March, in school and dispensary buildings. A month later, on 29 April, the 1,000-bed 45th General opened in Rabat, taking over the quarters previously occupied by the 51st Station. In anticipation of the shift, the 51st had moved into various structures connected with a racetrack on the outskirts of the city that had just been vacated by the 11th Evacuation Hospital. The 51st Station remained until 17 August, while the 45th General continued to receive patients until 15 November.

The last group of fixed hospitals to be established in ABS began operating early in May 1943, coinciding with the final phase of the Tunisia Campaign. The 50th Station, with 250 beds, opened in Casablanca on 5 May in tents and hastily constructed temporary buildings. The 23d Station, brought by air from the Belgian Congo, opened 250 beds under canvas at Port-Lyautey on 9 May, expanding to 500 beds late in July. The 250-bed 66th Station began operating at Casablanca on 12 May, in the buildings

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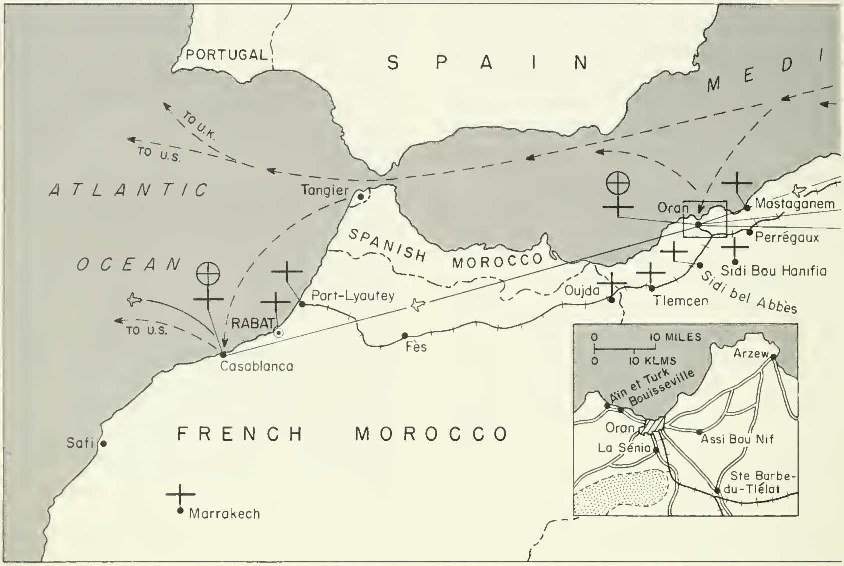
[16] See pp. 119–20, above.

[17] Major sources for this section are: (1) Annual Rpt, Med Sec, ABS, 1943; (2) Annual Rpt, Med Sec, NATOUSA, 1943; (3) Unit Rpts of hosps and other med installations mentioned in the text.


PORTUGAL
S P A I N
M E D I
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Tangier
SPANISH MOROCCO
Oran
Mostaganem
Perrégaux
Sidi Bou Hanifia
Sidi bel Abbès
Oujda
Tlemcen
Port-Lyautey
RABAT
TO U.S.
Casablanca
Fès
F R E N C H M O R O C C O
Safi
Marrakech
0 10 MILES
0 10 KLMS
Arzew
Ain et Turk
Bouisseville
Oran
La Sénia
Assi Bou Nif
Ste Barbe-du-Tlélat

Map 18—Fixed Hospitals and Base Medical Supply

Fixed Hospitals in North Africa, November 1942–February 1945

Port-Lyautey

91st Evacuation (as station), 2 February–25 April 1943. 400 beds.

23d Station, 9 May–19 September 1943. 250/500 beds.

Rabat

11th Evacuation (as station), 8 December 1942–3 April 1943. 400 beds.

51st Station, 31 January–17 August 1943. 250 beds.

45th General, 29 April–15 November 1943. 1,000 beds.

Casablanca

8th Evacuation (as general), 22 November 1942–19 June 1943. 750 beds.

59th Evacuation (as station), 30 December 1942–30 June 1943. 750 beds.

6th General, 27 February 1943–14 May 1944. 1,000 beds.

69th Station, 28 March–15 August 1943. 500 beds.

50th Station, 5 May 1943–19 May 1944. 250 beds.

66th Station, 12 May–6 December 1943. 250 beds.

56th Station, 14 May 1943–28 February 1945. 250 beds.

Marrakech

370th Station, 25 March 1943–28 February 1945. (Unnumbered provisional hospital to 4 August 1944) 25 beds.

Oujda

52d Station, 13 January–28 November 1943. 250–500 beds.

95th Evacuation (as station), 24 May–4 July 1943. 400 beds.

Tlemcen

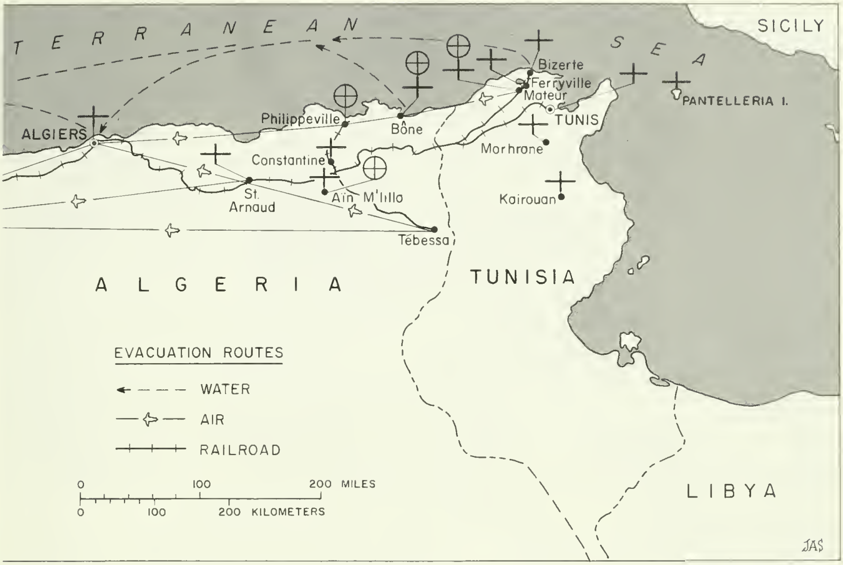
9th Evacuation (as station), 12–26 December 1942. 750 beds.

32d Station, 28 February–28 November 1943. 500 beds.

Oran Area

48th Surgical (as station), Arzew, 9 November 1942–18 January 1943. 400 beds.

77th Evacuation (as station), Oran, 12 November–1 December 1942. 750 beds.


TERRANEAN SEA
SICILY
PANTELLERIA I.
Bizerte
Ferryville
Mateur
TUNIS
Morhrone
Kairouan
ALGIERS
Philippeville
Bône
Constantine
St. Arnaud
Aïn M'lilla
Tébessa
ALGERIA
TUNISIA
LIBYA
EVACUATION ROUTES
WATER
AIR
RAILROAD
0 100 200 MILES
0 100 200 KILOMETERS
JAS

Depots in North Africa, November 1942–February 1945

38th Evacuation (as station), St. Cloud, 13 November 1942–6 February 1943. 750 beds.

151st Station, La Sénia, 25 November 1942–31 May 1944. 250 beds.

7th Station, Oran, 1 December 1942–31 July 1944. 750 beds.

180th Station, Ste. Barbe-du-Tlélat, 7 December 1942–30 September 1943; Bouisseville, 1 October 1943–15 April 1944. 250/500 beds.

64th Station, Sidi Bel Abbès, 28 December 1942–31 May 1944. 250 beds.

21st General, Sidi Bou Hanifia, 29 December 1942–30 November 1943. 1,000 beds.

12th General, Aïn et Turk, 14 January–3 December 1943. 1,000 beds.

40th Station, Arzew, 18 January–4 March 1943; Mostaganem, 4 March 1943–15 January 1944. 500 beds.

2d Convalescent, Bouisseville, 28 February 1943–31 May 1944. 3,000 beds.

91st Evacuation (as station), Mostaganem, 2 May–27 June 1943. 400 beds.

94th Evacuation (as station), Perrégaux, 22 May–29 August 1943. 400 beds.

16th Evacuation (as station), Ste. Barbe-du-Tlélat, 23 May–8 August 1943. 750 beds.

95th Evacuation (as station), Aïn et Turk, 6 July–16 August 1943. 400 beds.

69th Station, Assi Bou Nif, 30 September 1943–16 September 1944. 500 beds.

23d Station, Assi Bou Nif, 4 October 1943–28 August 1944. 500 beds.

51st Station, Assi Bou Nif, 28 October 1943–15 April 1944. 250 beds.

43d General, Assi Bou Nif, 31 October 1943–15 June 1944. 1,000 beds.

70th General, Assi Bou Nif, 31 October 1943–27 October 1944. 1,000/1,500 beds.

46th General, Assi Bou Nif, 4 November 1943–31 July 1944. 1,000/1,500 beds.

54th Station, Assi Bou Nif, 2 October–23 December 1944. 250 beds.

Algiers

29th Station, 30 January 1943–25 August 1944. 250 beds.

79th Station, 17 June 1943–30 June 1944. 500 beds.

FIXED HOSPITALS IN NORTH AFRICA, NOVEMBER 1942–FEBRUARY 1945—*Continued*

St. Arnaud
- 35th Station, 30 March–12 August 1943. 500 beds.

Constantine Area
- 61st Station, El Guerrah, 12 February–22 October 1943. 500 beds.
- 38th Evacuation (as station), Télergma, 9 March–30 April 1943. 750 beds.
- 73d Station, Constantine, 23 April 1943–20 January 1944. 500 beds.
- 26th General, Bizot, 26 April–31 October 1943. 1,000 beds.
- 57th Station, Oued Seguin, 5 May–5 September 1943; 20 January–25 September 1944. 250 beds.

Bône
- 77th Evacuation (as station), 16 April–25 June 1943. 750 beds.
- 105th Station, 25 July–7 September 1943. 500 beds.
- 57th Station, 7 September 1943–19 January 1944. 250 beds.

Bizerte-Tunis Area
- 38th Evacuation (as station), Bédja, 4 May–19 June 1943; Tunis, 20 June–24 August 1943. 750 beds.
- 9th Evacuation (as station), Michaud, 10 May–7 July 1943; Ferryville, 9 July–6 September 1943. 750 beds.
- 56th Evacuation (as station), Bizerte, 20 June–17 September 1943. 750 beds.
- 53d Station, Bizerte, 27 June 1943–12 January 1944. 250 beds.
- 54th Station, Tunis, 28 June 1943–30 August 1944. 250 beds.
- 78th Station, Bizerte, 1 July 1943–15 March 1944. 500 beds.
- 114th Station, Ferryville, 2 July 1943–10 May 1944. 500 beds.
- 58th Station, Tunis, 5 July–29 December 1943. 250 beds.
- 81st Station, Bizerte, 12 July 1943–4 April 1944. 500 beds.
- 3d General, Mateur, 13 July 1943–22 April 1944. 1,000 beds.
- 43d Station, Bizerte, 19 July 1943–12 January 1944. 250 beds.
- 60th Station, Tunis, 23 July–21 October 1943. 250 beds.
- 74th Station, Mateur, 29 July–17 November 1943. 500 beds.
- 103d Station, Mateur, 2 August–9 December 1943. 500 beds.
- 35th Station, Morhrane, 28 August–22 December 1943. 500 beds.
- 33d General, Bizerte, 15 September 1943–10 May 1944. 1,000 beds.
- 24th General, Bizerte, 28 September 1943–31 May 1944. 1,000 beds.
- 37th General, Mateur, 1 October 1943–12 April 1944. 1,000 beds.
- 105th Station, Ferryville, 21 October 1943–29 May 1944. 500 beds.
- 64th General, Ferryville, 23 October 1943–29 February 1944. 1,000 beds.
- 57th Station, Bizerte, 15 July–31 October 1944; Tunis, 1 November 1944–28 February 1945. 250/150 beds.

Pantelleria
- 34th Station, 18 June–21 September 1943. 250 beds.

Kairouan
- 55th Station, 26 June–11 October 1943. 250 beds.

North African Medical Supply Bases

Atlantic Base Section
- 4th Medical Supply Depot, Casablanca, 27 January–16 August 1943.

Mediterranean Base Section
- 2d Medical Supply Depot, Oran, 8 December 1942–15 August 1944.
- 60th Medical Base Depot Company, Oran, 15 August–15 December 1944.

Eastern Base Section
- 4th Medical Supply Depot, Aın M'lilla in the Constantine Area, with subdepots at Bône and Philippeville, 19 March–8 June 1943.
- 2d Medical Supply Depot, Mateur in the Bizerte-Tunis area, 15 May–8 June 1943.
- 7th Medical Supply Depot, Mateur, 8 June 1943–12 May 1944.

of the Italian consulate vacated when the 8th Evacuation moved into tents in March. The 56th Station opened 250 beds on 14 May in a prisoner-of-war enclosure at Berrechid, temporary buildings being supplemented by tents when the patient load required.

The 56th Station moved in August to the site of a French orphanage in Casablanca, where it operated a convalescent

500-Bed Ward of 6th General Hospital at Casablanca

camp for the 6th General Hospital. The 23d Station left ABS in September, and the 66th in December 1943. The 50th remained until 1 May 1944. Only the 56th Station at Casablanca and the 370th at Marrakech were still in operation when the area passed to control of the Africa—Middle East Theater on 1 March 1945.[18]

Hospitals in the Atlantic Base Section were supplemented by the 2d Medical Laboratory, which arrived in Casablanca 24 December 1942, and by the 5th General Dispensary, which reached that city on 20 February 1943. The 2d Medical Laboratory remained in the area until 15 June, operating mobile units at Marrakech, Fès, and other Moroccan cities. The 5th General Dispensary functioned in Casablanca until 30 August 1943.

Maximum bed strength in ABS was reached in May 1943 when 7,025 T/O beds were available, with expansion units capable of adding 50 percent to that total. The greatest patient load came in June and July, the peak being reached early in the latter month when 5,700 beds were occupied. Evacuation to the

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[18] See pp. 80, 84–85, above.

United States brought the figure down sharply before the end of the month, and there was a steady decline thereafter.[19]

Mediterranean Base Section—Until the second phase of the Tunisia Campaign got under way in February, the largest concentration of United States troops was in the area served by the Mediterranean Base Section, and the build-up of fixed hospitals was both more rapid and more extensive than was the case in ABS. Oran and its environs were well within range of enemy bombers based on Sardinia and in the Tunis-Bizerte area. The initial policy, therefore, was one of dispersal. Most hospital sites, many of them selected before the base section itself was activated, were considerable distances from the city.[20]

Here mobile hospitals that arrived immediately after the assault were quickly replaced by fixed units. First in the area was the 151st Station, which set up its 250 beds in the infirmary building at La Sénia airport, five or six miles south of Oran, on 25 November. Although supplemented by tents, the site proved inadequate, and the hospital moved at the beginning of April 1943 to a college plant somewhat nearer the city. The 7th Station Hospital, with a T/O of 750 beds, took over operation of a civilian hospital in Oran on 1 December, relieving the 77th Evacuation. The 7th Station was the only U.S. military hospital in Oran itself during the North African campaign. (*See Map 18.*)

The 180th Station Hospital opened at Ste. Barbe-du-Tlélat on 7 December, its 250 beds being housed in Nissen huts and tents. The 64th Station, another 250-bed unit, began operating on 28 December in buildings of the College Laperrine at Sidi Bel Abbès, near the home barracks of the famed French Foreign Legion. The last fixed hospital to receive patients in MBS before the end of 1942 was the 21st General, which opened on 29 December in a group of resort hotels at Sidi Bou Hanifia.

The 2,500 fixed beds in MBS on 1 January 1943 were doubled by the end of the month. The 250-bed 52d Station Hospital opened on 13 January at Oujda, where it was assigned to serve Fifth Army, then beginning the long period of training that would lead to Salerno and on to the Alps. The 12th General, with 1,000 beds, opened on 14 January, occupying 105 villas in the resort village of Aïn et Turk overlooking the Mediterranean west of Oran. It was then hoped to establish a hospital center there. The 40th Station operated 250 beds in the Foreign Legion barracks at Arzew from 18 January to 4 March, taking over from the 48th Surgical. The 40th then moved into a miscellaneous group of buildings in Mostaganem where its full T/O of 500 beds was set up. Last of the mobile units to depart the area was the 38th Evacuation Hospital, which had operated as a station hospital at St. Cloud from 13 November 1942 to 6 February 1943.

The Center District was served by the 29th Station Hospital of 250 beds, which took over a small civilian hospital in Algiers. Its first patients were transferred from a British hospital on 30 January.

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[19] See app. A–3.

[20] Principal sources for this section are: (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Annual Rpt, Med Sec, MBS, 1943; (3) Annual Rpt, Med Sec, Center Dist, MBS, 1943; (4) Unit Rpts of hosps and other med installations mentioned in the text; (5) H. J. Hutter, "Medical Service of the Mediterranean Base Section," *Military Surgeon* (January 1945), pp. 41–51.

Hospital facilities in MBS were considerably augmented when the 2d Convalescent Hospital began receiving patients on 18 February. Though assigned to the base section rather than to a combat element, the 3,000 beds of this unit were not reported as "fixed." They served, however, to free an equivalent number of beds in other hospitals. After diligent search, a suitable location for the 2d Convalescent was found at Bouisseville, close to Aïn et Turk. The hospital was in part under canvas and in part housed in 122 villas requisitioned for the purpose.

The 32d Station Hospital, of 500 beds, was in the theater a month before it opened on 28 February in school buildings at Tlemcen. The only other fixed hospital to be established in MBS before the end of the fighting in North Africa was the 91st Evacuation, which operated under canvas as a station hospital at Mostaganem from 2 May until 27 June 1943.

In addition to these fixed hospitals, there were two general dispensaries functioning in MBS during the period of hostilities. The 8th General Dispensary opened on 6 December 1942 in what had been the British Cottage Hospital in Algiers, where it was the only U.S. medical installation until the arrival of the 29th Station nearly two months later. The 6th General Dispensary opened on 13 February in the French Clinique Générale at Oran.

The T/O bed strength of fixed hospitals in the Mediterranean Base Section when combat operations in North Africa came to an end on 13 May 1943 was 5,400.[21] The number of beds established, however, was considerably greater, since most of the units were operating beyond their normal capacity, with tents and Nissen huts frequently being used to house expansion beds.[22] In addition to these fixed beds, the 3,000 beds of the 2d Convalescent Hospital were fully occupied.

Eastern Base Section—The first American hospital in the Eastern Base Section preceded the organization of the base section itself. This was the 500-bed 61st Station Hospital, which arrived at El Guerrah, some twenty-five miles south of Constantine, on 2 February 1943. (*See Map 18.*) The hospital was brought forward in response to a request from the Director of Medical Services, First Army, to relieve pressure on the British 31st General Hospital in the same area.[23] It was set up under canvas and received its first patients on 12 February. The 61st operated under British control until 1 March, when it was formally transferred to EBS. In its early weeks of operation, before the rainy season ended, mud was so deep on the hospital site that ambulances could not leave the road and patients had to be carried by litter to the receiving tent. "Often the bed would sink to the springs under the weight of the patient. This condition was corrected by placing rocks or large tin cans under the legs of the bed." [24]

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[21] The figure for T/O beds as of 13 May 1943, given in the text is the 30 April figure from Appendix A-3, less the 250 nonoperating beds of the 57th Station Hospital, transferred out of the MBS in the interval, and includes the addition of the 400 beds of the 91st Evacuation Hospital, which opened in MBS as a station hospital on 2 May 1943.

[22] See app. A-3.

[23] (1) Deputy Surg, AFHQ, to G-4, Orders, 61st Sta Hosp, 20 Jan 43, and atchmt, DDMS, First Army, to Surg, AFHQ, 15 Jan 43. (2) Memo, ADMS, No. 1 LofC Subarea, to DDMS, First Army, 3 Jan 43.

The 750-bed 38th Evacuation Hospital moved into the Constantine area early in March, opening on the 9th of that month at Télergma. Housed in tents, the 38th Evacuation served primarily as a station hospital for Air Forces personnel and as a holding unit for air evacuation during the campaign in southern Tunisia. A week before the northern campaign ended, the 38th shifted to the vicinity of Bédja a few miles behind the fighting front, but continued to be assigned to EBS, functioning as a station hospital again as soon as the fighting was over. The 35th Station established its 500 beds at St. Arnaud, about fifty miles west of El Guerrah, on 30 March, with two school buildings and a theater serving as housing.

The 77th Evacuation Hospital, which had served as a combat unit in the southern phase of the Tunisia Campaign, was assigned to EBS on 14 April, opening in tents at Morris near Bône two days later. There the 750-bed unit functioned in a dual role, as an evacuation hospital for II Corps and as a rear installation, receiving patients from other hospitals closer to the front. The 73d Station Hospital, with a T/O of 500 beds, opened at Constantine in three school buildings on 24 April.

The 26th General, with 1,000 beds, reached EBS late in March but was not ready to receive patients until 26 April. During the intervening month engineers had to lay out roads, build cement platforms for tents and Nissen huts, and install water and sewage facilities. The site of the hospital was Bizot, a railhead a few miles north of Constantine. The 26th General was the first U.S. general hospital to function under canvas in the theater. The 250-bed 57th Station, which opened on 5 May at Oued Seguin near the Télergma airfield, completed the fixed hospital installations in the Eastern Base Section up to the close of the Tunisia Campaign. The 57th was housed in tents and hutments. Also at Oued Seguin from 29 April was the 1st Medical Laboratory.

Counting the two assigned evacuation hospitals, there were 4,250 T/O beds in EBS as of 15 May 1943.[25]

Bed Shortages—T/O bed strength in communications zone hospitals during the Tunisia Campaign never approached the 6-percent ratio approved before the invasion. The actual ratio of T/O fixed beds to troop strength was only 3.2 percent at the end of January 1943,[26] when Tunisian casualties began flowing back to the fixed hospitals, and had climbed only to 5.1 percent by the end of May.[27]

In order to carry the patient load, evacuation hospitals were pressed into service as fixed units, and emergency beds were established in hospitals already in operation. The 21st General at Sidi Bou Hanifia, for example, reached a maximum patient census of 4,000 and cared for an average of 1,750, although

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[24] Med Hist, 61st Sta Hosp, 1943.

[25] This figure represents the T/O bed strength assigned to the EBS as of 30 April 1943, plus the 250 beds of the 57th Station Hospital, which opened as an EBS unit on 5 May 1943. See app. A–3.

[26] "On several occasions I heard that the hospital situation at the beginning was almost scandalous. It has been greatly improved, due to the energy and ability of a man named Blesse, whom I did not meet until later." Ltr, John J. McCloy, ASW, to Maj Gen Wilhelm D. Styer, CofS SOS, 22 Mar 43.

[27] See app. A–6.

26TH GENERAL HOSPITAL NEAR CONSTANTINE, ALGERIA, *the first U.S. general hospital to be set up in tents in the North African theater.*

its T/O called for only 1,000 beds. The necessity of operating for considerable periods at greater than normal capacity meant heavy demands on power, water, and mess facilities, as well as on personnel. Maintenance and repair were constant problems, with the need for carpenters, plumbers, and electricians often acute. Civilians were employed in considerable number wherever possible, while prisoners of war were used in various permitted capacities.

On the professional side, the primary personnel problem was one of making the best use of the skills available. The affiliated units, of which there were eleven in the theater during the period of active combat, were uniformly staffed with a disproportionate number of specialist personnel. Promotions within the unit were usually dependent on attrition, which was a slow and uncertain process. There were thus pressures both from within and outside these hospitals to transfer men to other units, where their skills could be used to better advantage and advance in rank would be more rapid. Personnel shifts between hospitals had become fairly common by the close of the Tunisia Campaign, the affiliated units, and especially the large general hospitals, being in effect raided to build up the staffs of smaller installations.[28]

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[28] For more detailed discussion of the personnel problem in the affiliated units, see McMinn and Levin, *Personnel in World War II,* pp. 206–10.

Temporary additions to the staffs of a number of fixed hospitals were also secured by the use of personnel not yet permanently assigned who were drawn from staging areas. Many hospitals arriving in the theater during the campaign were not immediately placed in operation, either because sites had not yet been prepared or because equipment had been delayed. Personnel of these units, both professional and enlisted, were usually assigned to temporary duty at some other hospital in the port area. This technique served the dual purpose of breaking in the newcomers, and of relieving the staff of established units of some of the burdens entailed when operating above normal capacity. Because most of the hospitals debarked at Oran, the greatest use of staging personnel was in the Mediterranean Base Section.

Development of North Africa as a Hospital Base

The Hospital Build-up—Short air routes, all-weather landing fields, ports, and rail connections all combined to make the Bizerte-Tunis area the logical hospital base to support the invasion of Sicily, scheduled for 10 July. With less than two months for preparation, the hospital build-up in the northeastern corner of Tunisia went forward as rapidly as the debris of battle could be cleared away. The final mopping up of Axis forces was still going on when the largest hospital convoy yet to reach the Mediterranean arrived at Oran on 11 May. The units included five 500-bed station hospitals, seven 250-bed station hospitals, a 400-bed field hospital, and a 400-bed evacuation hospital. The 1,000-bed 3d General Hospital debarked simultaneously at Casablanca. On 23 May 3 more 500-bed station hospitals arrived at Oran, bringing the total increment of beds to more than 7,500.[29]

The selection of hospital sites began as soon as an advance echelon of EBS headquarters had been established at Mateur on 12 May. At this time there were a general and four station hospitals in EBS, all of them in the Constantine area, with an aggregate T/O capacity of 2,750 beds. The three 750-bed evacuation hospitals employed during the campaign in northern Tunisia—the 9th, 38th, and 77th—continued to care for patients at normal or greater than normal capacity, bringing the minimum bed strength for the base section to 5,000. This total had been increased to 7,500 by the date of the invasion of Sicily, and to 12,000 by the beginning of August.[30]

The largest concentration was around Bizerte, where the 250-bed 53d Station Hospital was the first to open, on 16 June. The 750-bed 56th Evacuation Hospital, which had operated briefly at Casablanca, opened as a station hospital near Bizerte on 20 June. The 78th Station opened in the same area on 1 July, followed by the 43d, the 81st, and the 80th Stations on 11, 12, and 13 July, respectively. The 43d was a 250-bed unit, the other three were 500-bed hospitals. *(See Map 18.)*

In Tunis the 54th Station opened with 250 beds on 19 June, followed the next day by the 38th Evacuation, which had moved from its Bédja location. Two more 250-bed station hospitals, the 58th and 60th, opened in Tunis on 5 and 23 July, respectively. The 77th Evacuation Hospital closed at Morris on 25 June, but remained in the area for another two months. The 114th Station, of 500 beds, opened in the vicinity of Ferryville on 2 July, and a week later the 9th Evacuation moved from Mateur to Ferryville. Three more fixed hospitals were established at Mateur—the 1,000-bed 3d General on 15 July, in the quarters vacated by the 9th Evacuation; the 74th Station on 29 July; and the 103d Station on 2 August. Both station hospitals had 500 beds.

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[29] Except as otherwise noted, this section is based on: (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Annual Rpt, Med Sec, EBS, 1943; (3) Annual Rpts, Med Sec, MBS, 1943; (4) Unit Rpts of the hosps mentioned in the text.

[30] See app. A–3.

In addition to these four points of concentration, the 250-bed 55th Station Hospital opened in the Holy City of Kairouan on 19 June and the 105th Station, of 500 beds, at Aïn Mokra near Bône on 25 July. The latter unit moved to Ferryville late in October. Between 18 June and 21 September the 34th Station Hospital was attached to the Twelfth Air Force and operated 250 beds for Air Forces personnel on Pantelleria Island.

The rapid expansion of bed capacity in the Bizerte-Tunis area posed the most difficult siting problem encountered in the theater. Water was scarce, the region was poorly drained, and the malaria season was at its height. There were few usable buildings available, and materials for construction were almost equally difficult to procure in the brief time at the disposal of the engineers. In addition to these physical limitations, the military situation required an extensive build-up of troops and supplies in the same area, with competing demands for facilities, space, and engineering manpower. The 3d General Hospital at Mateur occupied former French military barracks, supplemented by tents and prefabricated huts, but the station hospitals had to rely for the most part upon canvas and such more stable structures as could be improvised. Water supply, sewage disposal, and power facilities all had to be installed.[31]

So great was the pressure upon the engineers for purely military construction that although the hospitals were physically in the area, only a portion of those relied upon to care for Sicily casualties were ready when the first patients were returned from the invasion coast. The situation was critical enough to send the theater surgeon, General Blesse, on a hasty flight to Mateur to size up the difficulties for himself. Before he returned to his Algiers headquarters, Blesse got the hospital program moving again, and took steps to strengthen the EBS medical section.[32]

Approximately 2,000 additional beds were also established in the Mediterranean Base Section between the end of the Tunisia Campaign and the assault on Sicily. The only fixed installation, however, was the 500-bed 79th Station Hospital, which opened at Cap Matifou just east of Algiers on 17 June. The others were evacuation hospitals serving temporarily as fixed units while staging for more active roles in future combat operations. The 94th Evacuation Hospital of 400 beds functioned as a station hospital at Perrégaux between 22 May and 29 August before taking part in the invasion of Italy, while the 400-bed 95th Evacuation, also destined for Salerno, served Fifth Army at Oujda from 24 May to 4 July. The 95th then moved to Aïn et Turk where it took casualties from

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[31] A. I. Zelen, MS, Hospital Construction in the Mediterranean Theater of Operations, United States Army, pp. 38–40.

[32] Surg, NATOUSA, Journal, 15, 16, 17 Jul 43. See also pp. 180–81, above.

Sicily until 16 August. The 750-bed 16th Evacuation Hospital operated as a station hospital for prisoners of war at San Seno Wells, near Ste. Barbe-du-Tlélat, between 23 May and 8 August. *(See Map 18.)*

After the Sicily Campaign was over, there was a further concentration of hospitals around Bizerte and Oran in support of expanding operations in Italy. North Africa achieved its maximum strength of approximately 25,000 T/O beds plus 14,000 expansion beds about the first of November. Even counting fixed beds already in Sicily and Italy, however, the ratio to troop strength remained below the original authorization of 6 percent and well below the 6.6-percent figure authorized in September.[33]

The Eastern Base Section reached the saturation point during September and October with the establishment of four additional 1,000-bed general hospitals. The movement started with an internal shift of the 35th Station Hospital from Saint-Arnaud near Constantine to Morhrane in the vicinity of Tunis. The 33d General opened in tents and hutments on "Hospital Road" just outside Bizerte on 15 September. The 24th General, which opened in the same area two weeks later, was more fortunate, being partially housed in French military barracks. The 37th General Hospital, which opened at Mateur on 12 September, and the 64th General, which began receiving patients at Ferryville on 23 October, were both under canvas supplemented by prefabricated units. *(See Map 18.)*

With no further hospital sites available in Tunisia, such additional build-up as was required was made in the Mediterranean Base Section, where conditions were good and a substantial degree of permanence was anticipated. An elaborate hospital groupment was laid out at Assi Bou Nif, about eight miles southeast of Oran. The 69th Station Hospital was shifted from Casablanca to the new site on 30 September, the 23d Station from Port-Lyautey on 4 October, and the 51st Station from Rabat on the 28th of the same month. In addition to these units from the Atlantic Base Section, two new 1,000-bed generals, the 43d and the 70th, opened at Assi Bou Nif on 31 October. The groupment was completed with the opening of the 46th General Hospital on 4 November.

The Assi Bou Nif project was planned for long-term use. Starting with open fields, the engineers installed complete power, water, and waste disposal facilities for a potential capacity of double the 4,250 beds actually installed. Buildings were mostly of permanent construction, many of them of stone. Those ward tents used had wood floors and frames. Nissen and Boyle huts were insulated. Much of the actual labor was performed by Italian prisoners of war, whose full utilization ceased to be restricted after Italy achieved the status of a cobelligerent. Local sandstone and cement were more readily available than lumber, and given unlimited supplies of manpower, were more economical.[34]

Hospitalization of Sicily Casualties in North Africa—For the first time in any U.S. theater in World War II, selective hospitalization was attempted for casualties from Sicily. With most of the available surgical teams assigned to the

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[33] See apps. A-3, A-6.

[34] Zelen, Hospital Construction in MTOUSA, pp. 30-31.

Hospital Groupment at Assi Bou Nif, Near Oran

combat zone, it was clear that there would not be enough skilled surgeons left to staff all of the Eastern Base Section hospitals, either for general work or for specialties. Careful plans were therefore made to assign patients to hospitals by type of case.

Craniocerebral, spine, and cord injuries were to go to the 78th Station Hospital, eye injuries to the 114th Station, chest cases to the 53d Station, and neuropsychiatric cases to the 43d Station. Compound fractures were to be handled by the 9th and 56th Evacuation Hospitals, and by the 74th, 80th, and 81st Stations. For emergency periods the two evacuation hospitals and the 3d General were qualified to treat cases of all types. Triage for those brought by sea was to be carried out by the 56th Evacuation at Bizerte, and for those flown from Sicily by the 9th Evacuation near Mateur airfield.[35]

It was possible to carry out these plans only in part. When the first casualties arrived on D plus 1 many of the EBS hospitals were not yet ready for patients. The road to the 9th Evacuation was too rough for transporting serious cases. There were not enough ambulances available for the extra carry involved in moving patients from the evacuation to the station hospitals. And finally, there were not enough beds to permit complete selectivity. The planning, moreover, had not taken into consideration the high incidence of malaria, or the accident rate consequent upon the staging of large numbers of troops. On the first day of the Sicily Campaign, more than a third of the approximately 6,500 beds established in northeastern Tunisia were already filled.

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[35] (1) Ltr, Col Churchill to Surg, NATOUSA, 19 Aug 43, sub: Tour Rpt, Sicily, D+24 to D+35. (2) Annual Rpt, Med Sec, EBS, 1943.

In actual practice, therefore, patients were sorted at the Bizerte docks by personnel of the 8th Port Surgeon's office and at Mateur airfield by personnel of the 802d Medical Air Evacuation Transport Squadron.[36] Representatives of the EBS surgeon assigned patients in terms of daily bed status reports from each hospital. Transportation was by the 16th Medical Regiment. Hospital specialties were observed so far as possible, but bed space was the overriding consideration.

The geography was such that there was in fact no alternative to initial hospitalization of casualties from Sicily in EBS, and so no attempt was made to build up bed strength elsewhere than in northeastern Tunisia. When wounded from Sicily were carried by returning shipping to Algiers instead of Bizerte, the 250-bed 29th Station Hospital was unable to carry the extra load. The still inoperative 79th Station had to set up tents to take the overflow. The 38th Evacuation Hospital at Tunis handled the relatively small number of U.S. casualties reaching that city, but its location was poor. At times, when the wind blew in from the desert, the temperature in the operating tent rose to 135° F. Needless, perhaps, to say the hospital did not remain in Tunis long.[37]

Hospitalization of Italy Casualties in North Africa—The establishment of additional hospitals in the Tunis-Bizerte area shortly after the Salerno landings of 9 September 1943 led to various changes in the disposition of patients being received by air and water in EBS.[38]

On 20 September a triage center was set up in the vicinity of the 33d General Hospital, approximately four miles from the Bizerte docks, a mile from the Sidi Ahmed airport, and 300 yards from the operating base of the 2670th Ambulance Company (Provisional). The triage center was conducted by 2 Medical Corps officers, and 2 Medical Administrative Corps officers, drawn from the various installations in the area and rotated monthly; and 6 nurses and 6 enlisted men from the 33d General Hospital. The center received a bed-status report each morning from the base surgeon's office. When a hospital ship arrived, the Port Surgeon notified the ambulance company, and word was passed along to the triage center, to which the patients were brought when unloaded. The 802d Medical Air Evacuation Transport Squadron at Sidi Ahmed airport was in direct telephonic communication with the 33d General Hospital, the triage center, and the 2670th Ambulance Company.[39]

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[36] Annual Report, Medical Section, EBS, says 807th MAETS, but this squadron did not arrive in the theater until September. See Med Hist, 807th MAETS, 1 Jan 45.

[37] (1) Surg, NATOUSA, Journal, 16 Jul 43. (2) Annual Rpt, 38th Evac Hosp, 1943.

[38] Except as otherwise noted, this section is based on: (1) Annual Rpt, Med Sec, EBS, 1943; (2) Annual Rpt, Med Sec, NATOUSA, 1943; (3) Unit rpts of hosps mentioned in the text.

[39] Memo, Capt Carl Schanagel, to Lt Col Oscar Reeder, 31 Oct 43.

The sorting station at Mateur airfield some 20 miles farther south continued to be available until the field was closed late in November, but received only one patient after 5 October.

The 33d General Hospital at this time took all craniocerebral, spine and cord, and maxillofacial cases. Chest and neck cases continued to go to the 53d Station Hospital until 21 October, and thereafter to the 24th General. Neuropsychiatric patients continued to go to the 43d Station until 16 November, when the unit was relieved by the 114th Station. Compound fractures continued to go to the 81st Station. All general hospitals, however, were authorized to take the overflow of both psychiatric and fracture cases when no space remained in the designated station hospitals. Eye injuries went to the nearest general hospital. All other types of surgical and medical cases were distributed according to the availability of beds.

Navy personnel went to the 80th Station Hospital at Bizerte or to the 54th at Tunis, whichever was closer; or to specialized hospitals if the type of injury so required. Prisoner-of-war patients also went to the specialized hospitals if triage so indicated, otherwise to the 78th or 103d Station.

Late in October the 105th Station Hospital opened as a convalescent hospital and venereal disease treatment center, gradually increasing its capacity to 3,000 beds. The 105th took patients only by transfer from other hospitals, under suitable controls to prevent "dumping." At this time, with an adequate number of beds available in EBS, a 90-day evacuation policy was established for general hospitals and a 30-day policy for station hospitals.

After the middle of December, with hospital facilities rapidly building up in Italy, the influx of patients into North Africa fell off sharply. There was a large movement of patients during the week of 15–21 January 1944, when hospitals in the Naples area were being cleared preparatory to launching the Anzio operation, but after that period the major burden of communications zone hospitalization was carried in Italy.[40]

Hospitalization in Sicily, Sardinia, and Corsica

Island Base Section—With the cessation of hostilities in Sicily, the 93d Evacuation Hospital closed in preparation for a Fifth Army assignment. The 15th Evacuation was moved to a new site a few miles east of Licata on the Gela road, while the 128th Evacuation went to Castellammare, west of Palermo, and the 11th replaced the 128th at Cefalù. Newly arrived from the Middle East, the 1st Platoon of the 4th Field Hospital was established three days before the end of the campaign at Palagonia, on the southwestern edge of the Catanian plain. These locations were selected with a view to providing station hospital service for troops remaining in Sicily, and the hospitals retained their Seventh Army assignments, with IBS exercising only a co-ordinating function.[41]

The 9th Evacuation Hospital was brought from North Africa early in September, opening at Termini on 1 Octo-

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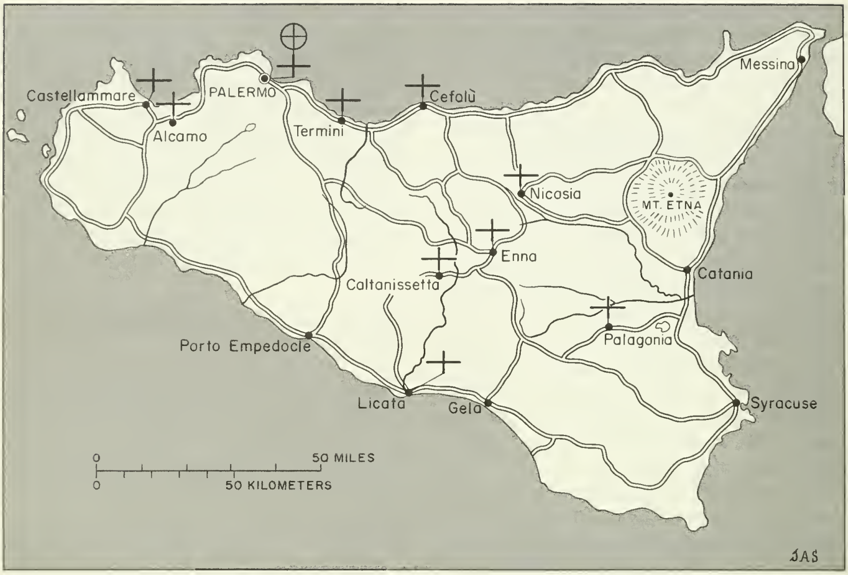
[40] Hq, ETOUSA, Rpt on PBS, 10 Feb 44. See also p. 343, below.

[41] This section is based generally on: (1) Annual Rpts, Med Sec, NATOUSA, 1943, 1944. (2) Unit rpts of the hosps mentioned in the text. No medical section reports for the IBS have been found.


Castellammare
PALERMO
Alcamo
Termini
Cefalù
Messina
Nicosia
MT. ETNA
Enna
Caltanissetta
Catania
Palagonia
Porto Empedocle
Licata
Gela
Syracuse
0
50 MILES
0
50 KILOMETERS

MAP 19—Fixed Hospitals and Base Medical Supply Depots on Sicily, August 1943–July 1944

FIXED HOSPITALS IN SICILY, JULY 1943–JULY 1944

Castellammare-Alcamo

128th Evacuation (as station), 19 August–31 October 1943. 400 beds.

Palermo

91st Evacuation (as station), 27 July–31 October 1943. 400 beds.

59th Evacuation (as general), 8 August 1943–6 May 1944. 750 beds.

34th Station, 1 November 1943–9 July 1944. 250 beds.

11th Evacuation (as station), 23 November–31 December 1943. 400 beds.

154th Station, 6 May–30 June 1944. 150 beds.

Termini

9th Evacuation (as station), 1 October–31 December 1943. 750 beds.

Cefalù

11th Evacuation (as station), 19 August–23 November 1943. 400 beds.

Licata

15th Evacuation (as station), 19 August–29 September 1943. 400 beds.

77th Evacuation (as station), 27 September–26 October 1943. 750 beds.

Palegonia

4th Field, 1st Platoon (as station), 14 August–19 November 1943. 100 beds.

Island Base Section Medical Supply Installations

Palermo

4th Medical Supply Depot, 1 September–21 October 1943.

2d Medical Supply Depot, 21 October 1943–10 February 1944.

Provisional Depot Company, 10 February–1 June 1944.

684th Quartermaster Base Depot Company, 1 June–15 July 1944.

ber. On the same date the 77th Evacuation supplanted the 15th at Licata, the latter unit being withdrawn for service in Italy. The 128th Evacuation moved into buildings in Alcamo on 9 October, a week after a hurricane had leveled virtually all of its tentage at Castelammare. The 250-bed 34th Station Hospital, only fixed installation on the island, opened at Palermo on 1 November. The maximum fixed-bed strength in Sicily was reached at this time—3,700 counting both IBS and Seventh Army installations.[42] (*Map 19*)

Evacuation of the remaining casualties from Sicily, reduction in the strength of occupation troops, and the departure of staging units about this time greatly reduced the demand for hospital beds. The 77th and 128th Evacuation Hospitals, together with the 91st, which had remained in place in Palermo, left the theater for England early in November. Later that same month the 1st Platoon of the 4th Field Hospital was attached to the Air Forces and shifted to Italy, while the 11th Evacuation moved to Palermo. Both the 9th and 11th Evacuation closed on 31 December preliminary to departure for Italy. Left in Sicily at the beginning of 1944 were the 59th Evacuation, acting as a general hospital, and the 34th Station, both at Palermo. The 59th was replaced in May 1944 by the 150-bed 154th Station, but both this hospital and the 34th Station left Sicily two months later. The Island Base Section passed out of existence on 15 July 1944.

Northern Base Section and Sardinia—As of 1 January 1944, the two platoons of the 15th Field Hospital on Corsica were reassigned to the Northern Base Section. The NORBS surgeon, Colonel Robinson, began a survey of the island for hospital sites immediately afer his arrival on 8 January and prepared plans calling for the addition of 1,250 fixed beds, to be dispersed in relation to airfields and troop concentrations. Transportation shortages stemming from the requirements of the Anzio Campaign forced some delay, but the 500-bed 35th Station Hospital opened at Cervione, midway up the eastern coast of Corsica, on 1 March. Ten days later the 40th Station, also with 500 beds, replaced the 1st platoon of the 15th Field at Ajaccio. The latter unit shifted to Calvi in the northwestern part of the island, but operated there only a few weeks before being supplanted by the 250-bed 180th Station on 28 April 1944. The field hospital platoon then went to Ghisonaccia, some twenty miles below Cervione. All three station hospitals on Corsica came from North Africa. In the absence of suitable buildings, all American hospitals on the island were set up under canvas, supplemented by prefabricated huts as the engineers found time to erect them.[43]

The two hospitals on Sardinia—the 3d Platoon of the 15th Field, and the 60th Station—remained as Air Forces units until the first week in May, when they were assigned to the Allied garrison on Sardinia. The 60th Station opened a second 250-bed expansion unit in January, but no further increase in U.S. hospital

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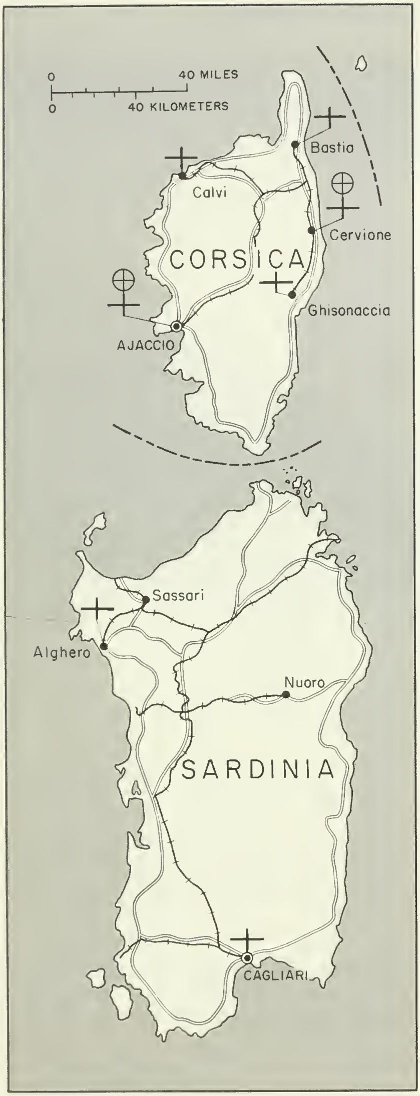
[42] See app. A–4.

[43] (1) Annual Rpt, Med Sec, NORBS, 1944. (2) Unit rpts of hosps mentioned in the text. (3) See app. A–4.



Map 20—Fixed Hospitals and Base Medical Supply Depots on Sardinia and Corsica, November 1943–May 1945

Fixed Hospitals on Sardinia and Corsica, November 1943–May 1945

Cagliari, Sardinia
- 60th Station, 3 November 1943–31 October 1944. 250/500 beds.

Alghero, Sardinia
- 15th Field, 3d Platoon (as station), 13 December 1943–30 August 1944. 100 beds.
- 60th Station, Detachment, 30 August–22 September 1944. 100 beds.

Ajaccio, Corsica
- 15th Field, 1st Platoon (as station), 19 January–11 March 1944. 100 beds.
- 40th Station, 11 March–4 October 1944. 500 beds.
- 60th Station, Detachment, 23 October 1944–20 January 1945. 150 beds.

Calvi, Corsica
- 15th Field, 1st Platoon (as station), 20 March–28 April 1944. 100 beds.
- 180th Station, 28 April–10 September 1944. 250 beds.

Bastia, Corsica
- 15th Field, 2d Platoon (as station), 1 December 1943–16 October 1944. 100 beds.
- 60th Station, Bigulia, 6 November 1944–4 March 1945. 350/500 beds.
- 40th Station, Bigulia, 1 February–3 May 1945. 200/500 beds.

Cervione, Corsica
- 35th Station, 1 March–10 September 1944. 500 beds.
- 40th Station, Detachment, 14 October 1944–14 April 1945. 350/150 beds.

Ghisonaccia, Corsica
- 15th Field, 1st Platoon (as station), 28 April–28 October 1944. 100 beds.
- 40th Station, Detachment, 28 October 1944–8 April 1945. 150 beds.

Northern Base Section Medical Supply Installations

Ajaccio, Corsica
- 7th Medical Depot Company, 1 March–1 June 1944.
- 684th Quartermaster Base Depot Company, 1 June–1 September 1944.

Cervione, Corsica
- 7th Medical Depot Company, 1 May–1 June 1944.
- 684th Quartermaster Base Depot Company, 1 June 1944–21 March 1945.
- 80th Medical Base Depot Company, 21 March–10 April 1945.

capacity on Sardinia was required.[44] (*Map 20*)

Hospitalization of Prisoners of War in North Africa

The 275,000 prisoners taken at the close of the Tunisia Campaign exceeded all expectations and created a problem with which the Allied authorities were inadequately prepared to deal. By agreement between Generals Cowell and Blesse and the Provost Marshal General, captured medical and sanitary personnel were divided between the U.S. and British medical organizations according to need, but in the confusion of mass transfers to less congested areas, it was not at once possible to make use of those men to any great extent in caring for their own sick and wounded. Initially, Tunisian prisoners were given medical care in regular U.S. Army hospitals, normal staffs being supplemented as extensively as possible by prisoner personnel. Where fixed hospitals were not available, dispensary service was given by protected enemy personnel under supervision of the medical sections of the administrative companies operating the prisoner-of-war camps.[45]

The largest single cause for hospitalization of prisoners in the summer and early fall of 1943 was malaria, with dysentery also high on the list. Many of those taken in the Tunisia Campaign were suffering from malnutrition, which undoubtedly increased the disease rate, as also did unsanitary conditions in the hastily improvised prison camps and along the crowded transportation routes to the rear. Battle wounds were a significant factor only in May.[46]

German and Italian prisoners taken in the final days of the Tunisia Campaign were cared for in EBS by the 61st Station and the 26th General Hospitals, both of which remained in the Constantine area through October 1943. At the 26th General prisoner wards were set up inside a barbed-wire enclosure, with guards initially assigned from the medical detachment. These were later replaced by military police.[47]

In the Mediterranean Base Section, two hospitals cared for prisoner patients from Tunisia, and later from Sicily. The 21st General at Sidi Bou Hanifia opened a prisoner-of-war section on 29 April to care for the sick and injured in POW Enclosure 130. The section continued to operate as such until the hospital closed in Africa at the end of November. In 200 days of operation, 2,285 prisoner patients were admitted, more than 13 percent of all patients for the period. The largest daily census was 538. Both German and Italian prisoners were treated, and medical personnel of both enemy countries assisted in their care. At Ste. Barbe-du-Tlélat, the 16th Evacuation operated a hospital in prisoner-of-war Enclosure 129 between 23 May and 8 August. Between the latter date and 30 September the hospital was operated by the 180th Station. Patients here were predominantly Italian, as were the protected personnel who augmented the U.S. hospital staff.[48]

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[44] (1) Annual Rpt, Med Sec, AAFSC MTO, 1944. (2) Annual Rpt, 15th Field Hosp, 1944. (3) Annual Rpt, 60th Sta Hosp, 1944. (4) See app. A–4.

[45] (1) Annual Rpt, Med Sec, NATOUSA, 1943. (2) Hist, Med Detach, 6619th POW Administrative Co, 1943. The figure 275,000 for prisoners taken in Tunisia is from Howe, *Northwest Africa* p. 666.

[46] ETMD, NATOUSA, Oct 43.

[47] (1) Annual Rpt, Med Sec, EBS, 1943. (2) Annual Rpt, 61st Sta Hosp, 1943. (3) Annual Rpt, 26th Gen Hosp, 1943.

Largest of the hospitals for Tunisia prisoners was the 56th Station in ABS, which was set up between 4 and 14 May inside POW Enclosure 100 at Berrechid, some twenty miles south of Casablanca. Almost half of all prisoners taken in Africa passed through this camp, which had an average population of 20,000 with a maximum of 28,000. Germans and Italians there were about equal in numbers. The patient census varied from 205 to 978, averaging about 750. The hospital had nine prefabricated buildings, supplemented by tents. In addition to hospital care, the 56th Station maintained small dispensaries in various parts of the compound, where outpatient service was given to between 300 and 400 a day.[49]

The inadequate hospital staff was supplemented by detachments of 3 officers, 6 nurses, and 22 enlisted men each from the 34th, 36th, and 37th Hospital Ship Platoons; by 2 German medical officers, each of whom had charge of a ward; and by 100 to 120 German medical soldiers who worked under their own noncommissioned officers. Nurses were quartered outside the compound. Their duties were largely supervisory, with actual nursing confined to seriously ill and surgical cases. They performed no night duty.

The 56th Station Hospital closed at Berrechid on 15 August when the prison camp was closed.

The bulk of the prisoner-of-war patients from Sicily who were not retained on the island went initially to the 80th Station Hospital at Bizerte, where they were guarded by French military personnel. Prisoner patients from the Italian campaign that were received in the EBS were routed to the 78th Station Hospital at Bizerte or to the 103d Station at Mateur.

After Italy became a cobelligerent, Italian prisoners in Africa were organized into service units of various types. Their status made it necessary to keep them completely separated from the German prisoners. At the same time, their numbers and the assignments given them increased their hospitalization requirements.

On 26 September, therefore, the Italian wards of the hospital then being operated by the 180th Station in prisoner-of-war Enclosure 129 was redesignated the 7029th Station Hospital (Italian). It was staffed by Italian medical personnel under U.S. supervision, assisted for the first two months by detachments from two U.S. hospital ship platoons. The maximum census before the end of 1943 was about 800.[50]

The German wards of the hospital in POW Enclosure 129 were reorganized at the same time into a German station hospital, under U.S. supervision but staffed, like the Italian hospital, by captured medical personnel. In December the German hospital moved to neighboring POW Enclosure 131, and the 7029th moved back into the quarters previously occupied in Enclosure 129. Prisoner-of-War Hospital 131, as the German unit was thereafter known, was equipped at

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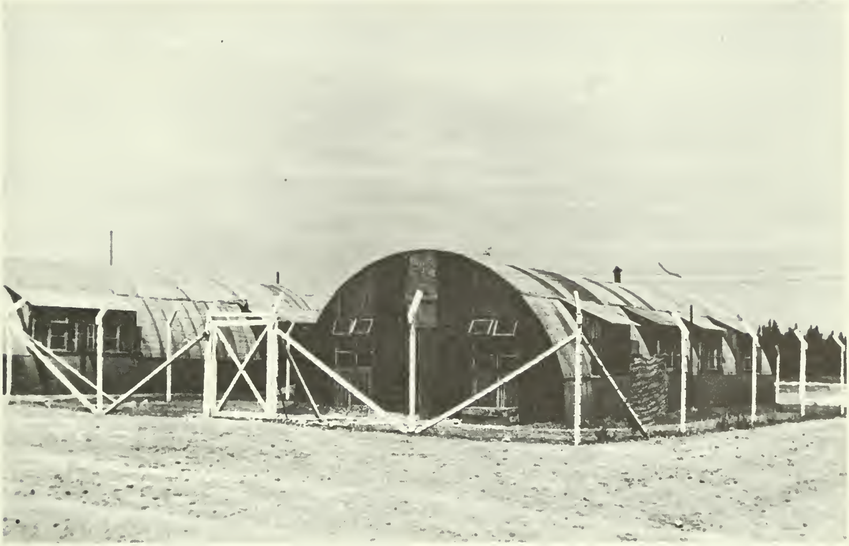
[48] (1) Annual Rpt, Med Sec, MBS, 1943. (2) Annual Rpt, 21st Gen Hosp, 1943. (3) Annual Rpt, 16th Evac Hosp, 1943. (4) Annual Rpt, 180th Sta Hosp, 1943.

[49] (1) Annual Rpt, Med Sec, ABS, 1943. (2) Annual Rpt, 56th Sta Hosp, 1943.

[50] Hist, 7029th Sta Hosp (Italian), 27 Jul 45.



Prison Stockade, 180th Station Hospital, Ste.-Barbe-du-Tlélat, Near Oran

this time to care for 500 patients, but gradually expanded as more German medical officers became available.[51]

The 56th Station Hospital opened a 75-bed unit for prisoner personnel of Italian service companies in the Casablanca area late in 1943. This unit was formally designated the 7393d Station Hospital (Italian).

Only cases that could not be handled by one of these prisoner-of-war hospitals went to U.S. installations.

Although 3,066 sick and wounded prisoners of war were evacuated to the zone of interior during 1943, an aggregate of 1,982 remained hospitalized in North Africa at the end of the year.

Evacuation in the Communications Zone

Evacuation Between Base Sections

The geographical distribution of fixed hospital beds in North Africa in relation to the changing combat zones and to ports of embarkation made it necessary to keep patients moving steadily from one base section to another in order to accommodate new casualties as close as possible to the area of combat. Evacuation from east to west went on as long as the North African communications zone itself remained in existence.

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[51] (1) Annual Rpt, Med Sec, MTOUSA, 1944, an. B. (2) Annual Rpt, Med Sec, MBS, 1943. (3) Hist, 7029th Sta Hosp (Italian).

Tunisia Campaign—Evacuation between base sections in North Africa was a continuous process after the Tunisia Campaign got well under way. The established evacuation policy for the Eastern Base Section of thirty days and of ninety days for the other two North African base sections was impossible to observe rigorously in practice. EBS hospitals functioned in fact as little more than evacuation units, sending a constant flow of patients back to Algiers and Oran. To make room for these, Mediterranean Base Section hospitals were forced to send other patients still farther back, to the Casablanca area or to the zone of interior. Casualties from the Tunisian battle fronts began arriving in the Atlantic Base Section toward the end of April, continuing in a steady stream until midsummer.[52]

During the southern phase of the Tunisia Campaign the 61st Station Hospital at El Guerrah was the principal distributing point in the Eastern Base Section. Each day patients from the 61st were moved by Air Forces ambulances a distance of twenty miles to the 38th Evacuation Hospital at Télergma airfield to make room for the next convoy arriving from the front. "Admissions were as high as 350, and evacuation by air totaled 350, in a single 24 hour period.[53] It was not until 30 March that another U.S. hospital, the 35th Station at Saint-Arnaud, was available in the area, and this installation took only one trainload of 228 patients from II Corps.

In the northern phase of the campaign, the 77th Evacuation Hospital near Bône served as both a base section fixed unit and a combat zone hospital. Patients received from the front were sent either to the Mediterranean Base Section or to the Constantine area, where the 73d Station and 26th General Hospitals opened late in April and the 57th Station early in May. Evacuation to MBS from the 77th Evacuation was by air and by British hospital ship. To Constantine it was by motor ambulance.

For the period 1 January to 15 May 1943, according to figures reported by the NATOUSA medical section, 12,616 patients were evacuated by air from the combat zone to MBS, either direct or through EBS hospitals; 2,660 were evacuated by sea and 707 by rail. In addition to these, 665 patients were flown from MBS to ABS, and 900 came from MBS to ABS by rail. The 802d Medical Air Evacuation Transport Squadron reported a total of 16,300 patients evacuated by air, including both the 4,806 flown directly from the combat zone. (*See Table 2, p. 140.*) and those moved to more rearward areas within the theater. (*Table 3*) The higher MAETS figure is accounted for, at least in part, by the somewhat different time span—16 January–23 May—and by the inclusion of Air Forces casualties which were frequently not cleared through normal hospital channels.

Rail evacuation between base sections became increasingly important toward the close of the Tunisia Campaign. The first U.S. hospital train in the theater was assembled in March from French rolling stock. Second- and third-class passenger cars and box cars were converted into ten-litter cars, four for sitting

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[52] Principal sources for this section are: (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Annual Rpt, Med Sec, EBS, 1943; (3) Annual Rpt, Med Sec, MBS, 1943; (4) Annual Rpt, Med Sec, ABS, 1943; (5) Unit rpts of individual med installations mentioned in the text.

[53] Annual Rpt, 61st Sta Hosp, 1943.

TABLE 3—INTRATHEATER EVACUATION BY AIR, NORTH AFRICA, 16 JANUARY–23 MAY 1943

Route	Air Miles	Patients Carried		
		Litter	Sitting	Total
Total	....	5,648	5,846	11,494
EBS to MBS	....	4,888	4,845	9,733
Télergma to Algiers	180	1,993	1,653	3,646
Télergma to Oran	390	2,246	2,899	5,145
Bône to Algiers	240	12	....	12
Bône to Oran	460	637	293	930
EBS to ABS	....	39	70	109
Télergma to Casablanca	825	39	70	109
Within MBS	....	343	515	858
Algiers to Oran	230	343	515	858
MBS to ABS	....	378	416	794
Oran to Casablanca	445	280	329	609
Algiers to Casablanca	645	98	87	185

Source: Med Hist, 802d MAETS, 1942–44.

patients, a train personnel car, a kitchen, and a kitchen supply car. Manned initially by personnel of the 5th Hospital Ship Platoon, the train carried 120 litter and 180 sitting patients. The first run, from Oran to Casablanca, was completed on 31 March. A second hospital train, converted and operated by personnel of the 41st Hospital Train, was placed in operation on 15 May. Shortly thereafter the first train was taken over by personnel of the 42d Hospital Train. A third American hospital train, converted from French rolling stock, went into operation in July, in time to help clear casualties from Sicily through EBS and MBS. A boarding party from the 6th General Hospital at Casablanca met each incoming train at Fès, collecting valuables, checking records, and assigning patients to wards while they were still in transit.[54]

Sicily and Italy Campaigns—From mid-July 1943 through the remainder of the year, movement of the sick and wounded out of the Bizerte-Mateur-Tunis area to hospitals farther to the rear was almost as rapid as the inflow of casualties from Sicily and Italy. In the early stages of the Sicily Campaign, there were not enough beds available to permit extended hospitalization in Tunisia. Even the addition of 2,500 beds before the end of the Sicilian fighting did not appreciably improve the situation, because of the requirements of the forthcoming invasion of Italy. One consequence was the evacuation of many patients with limited hospital expectancy, who were virtually well by the time they reached the Mediterranean Base Section.

During the 2-month interval between the Sicilian and Italian D-days, EBS forward hospitals received 5,713 patients from Sicily by sea and 7,603 by air, or 13,316 all told. In the same period a total of 10,720 patients was evacuated to installations farther removed from the combat zone.[55]

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[54] (1) Annual Rpt, 41st Hosp Train, 1943. (2) Annual Rpt, 6th Gen Hosp, 1943. (3) ETMD, NATOUSA, Jul 43.

The first patients from Italy were carried to EBS by returning transports on 12 September, and the first arrivals by air were received on the 23d. After 28 September much of the air evacuation from Italy was routed by way of Sicily with an overnight stop at Termini airfield near Palermo, but hospitalization was not involved except in emergencies. Patients were kept in an air evacuation holding unit and flown on to Africa the next day.

For movement out of the forward area of EBS, hospital ships were used between Bizerte and Oran; planes to Algiers; and hospital trains to Constantine, which was included in MBS in October. From Constantine further rearward movement was by train or plane.[56]

Between 10 July and 31 December 1943, 34,116 patients were received in EBS from Sicily and Italy, 12,902 by sea, and 21,214 by air. In the same period, 16,116 were transferred to rear areas of the North African communications zone, 9,238 by sea, 3,577 by air, and 3,301 by rail. In addition to these intratheater transfers, 801 patients were evacuated from EBS directly to the United States by sea. French casualties from Italy began entering the U.S. evacuation channels in December but were separated on arrival in North Africa and passed to French control.[57]

In January 1944, as part of the process of clearing fixed hospitals in Italy in anticipation of heavy casualties at Anzio and along the Rapido, 5,538 U.S. patients were evacuated to EBS, 3,232 by sea and 2,306 by air.[58] This was the last heavy demand upon the North African communications zone, which declined steadily in importance thereafter.

Evacuation from Corsica and Sardinia was by air to North Africa during the period before the fall of Rome, but was of relatively minor significance.

Evacuation to the Zone of Interior

In the early stages of the Tunisia Campaign, American litter patients destined for the zone of interior were evacuated from Oran to the United Kingdom on British hospital ships, while neuropsychiatric, ambulatory, and troop-class patients went directly to the United States by unescorted troop transport.[59] Instructions were changed at the beginning of May to permit evacuation of all classes of patients in transports, with Casablanca the primary port of embarkation for this purpose. Later in the year, convoyed troopships took occasional loads from Oran, while two U.S. hospital ships, the *Acadia* with a capacity of 806 and the *Seminole* with a capacity of 468, became available for evacuation from ports farther east in the Mediterranean. The *Acadia*, however, was too large to dock at Bizerte. A total of 20,358 U.S. Army patients were evacuated from North Africa to the zone of interior during 1943. (*Table 4*) Only a handful were evacuated to the United States by air in this period, each case being a matter for separate negotiation.

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[55] Annual Rpt, Med Sec, EBS, 1943.

[56] Surg, NATOUSA, Journal, 12 Jul, 17 Aug 43.

[57] *Ibid.*, 27 Dec 43.

[58] Rpt of Surg, MTOUSA, 1944, an. B, app. 20.

[59] Troop-class patients were those who needed little medical care en route and were able to care for themselves even in emergencies.

Medical Supplies and Equipment

Medical supplies and equipment for U.S. forces operating in the North African theater were originally the responsibility of the task forces. The supply function passed to the base sections when they were activated, with centralized coordination through the Medical Section, AFHQ, and later NATOUSA. After 14 February 1943, central direction of theater supply activities was through the Medical Section, SOS, NATOUSA.

Medical Supply in the Base Sections

The task forces making the North African landings included no trained personnel for handling medical supplies, which were scattered in chaotic fashion over the Moroccan and Algerian beaches. Records were inadequate or nonexistent, and there were no supply depots

INTERIOR OF HOSPITAL TRAIN *on run from Oran to Casablanca.*

TABLE 4—U.S. ARMY PATIENTS EVACUATED BY SEA FROM NORTH AFRICA TO THE ZONE OF INTERIOR, 1943

1943	To U.S.		To U.K.	Total
	Transport	Hospital Ship	British Hospital Ship	
Total	16,284	3,593	481	20,358
January	40	....	191	231
February	217	....	111	328
March	224	....	179	403
April	1,561	....	....	1,561
May	1,422	....	....	1,422
June	1,166	729	....	1,895
July	2,704	....	....	2,704
August	1,097	467	....	1,564
September	3,168	....	....	3,168
October	1,415	779	....	2,194
November	1,900	450	....	2,350
December	1,370	1,168	....	2,538

Source: Annual Rpt, Med Sec, NATOUSA, 1943, p. 184.

until the base section organizations took control.[60]

In the Atlantic Base Section, warehouses and issue points were operated during January 1943 by personnel of hospital ship platoons, but no inventories were attempted. The 4th Medical Supply Depot took over the function on 27 January, establishing an orderly system of distribution centered in Casablanca. This organization remained in ABS until 16 August, after which personnel of hospital ship platoons again resumed the supply function. By that date, however, ABS had so far declined in importance as to make the work a routine operation.

The development of a medical supply system in the Mediterranean Base Section followed a similar pattern. A section of the 2d Medical Supply Depot was functioning in Oran before the end of November 1942. As rapidly as possible scattered supplies were brought together and suitably housed in and around Oran, while inventories were corrected and brought up to date. A shortage of organizational equipment—not included in the initial automatic delivery of supplies on the basis of troop strength—was made up in large part by diverting to depot stock a complete 1,000-bed hospital assembly that had been shipped for the 26th General. The equipment arrived several weeks before the hospital could be set up, and the needs of operating units were too great to permit the material to remain idle. For example, the first abdominal operation at the 21st General Hospital after that unit was set up at the end of December was performed "with three or four borrowed clamps, a scalpel, and a pair of scissors."[61]

In the Eastern Base Section, a section of the 4th Medical Supply Depot set up a major supply base at Aïn M'lilla, about twenty-five miles south of Constantine, on 19 March, with subdepots at Bône and Philippeville. This unit was relieved after the close of the Tunisia Campaign by elements of the 7th Medical Supply Depot, which also supplanted personnel of the 2d Medical Supply Depot at Mateur. The latter group had served II Corps in the field during the active fighting, but had been reassigned to EBS in May.

The section of the 4th Medical Supply Depot, which had gone to Sicily with Seventh Army,[62] was reassigned to the Island Base Section on 1 September. The 4th continued to operate the supply base at Palermo until late in October, when the function was transferred to the 1st Advance Section of the 2d Medical Supply Depot. In Corsica a supply dump for the Northern Base Section was established at Ajaccio about 1 March 1944 by the 7th Medical Depot Company.[63]

In general, medical supplies and equipment were adequate throughout the North African and Sicilian campaigns. Shortages in specific items, such as prosthetic dental supplies and optical equipment, were owing in part to inadequacies in the original medical maintenance units and in part to the unexpectedly high need for dental replacements and for glasses among troops sent to the theater. In the case of prosthetic supplies, shortages in the zone of interior further delayed the filling of requisitions, but supplies in both categories were reaching Africa in sufficient quantities by the end of the year.

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[60] Except as otherwise noted, this section is based on (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Annual Rpts, Med Secs, of the base sections; (3) Rpt, Med Supply Activities, NATO (Nov 42–Nov 43); (4) Davidson, Med Supply in MTOUSA, pp. 1–49; (5) Rpts of individual med units mentioned in the text.

[61] Diary of Col Lee D. Cady

[62] See pp. 169–70, above.

[63] The 2d, 4th, and 7th Medical Supply Depots were reorganized 3 December 1943 into medical depot companies, under TOE 8–661, dated April 1943.

Shortages of various items reported by hospital commanders were in part owing to the fact that many hospitals reached the theater without all their equipment, in part to breakage as a result of faulty packing, and in part to the necessity of operating above normal capacity. The Tables of Equipment themselves were not entirely suitable to the needs of the theater, but deficiencies were quickly made up. Hospitals arriving during the first four or five months, for example, did not have adequate generating equipment, but here, as in many other instances, the Corps of Engineers made up the deficiencies. Ordnance and Quartermaster units were also ready at all times to improvise equipment or to requisition missing items for hospital use.

Another problem arose because some medical officers, particularly surgeons, who were fresh from civilian practice, found it hard to adjust themselves to the more limited range of equipment it was possible to carry into a combat theater, and the items available did not always correspond to individual preferences in drugs and instruments. There is no evidence, however, that the medical service rendered in North Africa was ever seriously curtailed or impaired for lack of supplies or equipment. Even those hospitals that were most distant from supply points managed to get what was needed, by air if necessary.[64]

Where essential equipment was lacking, hospital staffs showed considerable ingenuity in improvising substitutes. Cabinets and laboratory benches were built of waste lumber; heating units, sterilizers, laundry equipment, and showers were fashioned from empty gasoline drums and odd bits of pipe; soap was made from discarded kitchen fats; parts were salvaged from worn-out equipment and reused for the same or other purposes. In the cities it was sometimes possible to procure local equipment, but more frequently equipment had to be made out of available materials. In Casablanca, for example, such items as wash basins, toilet bowls, and sinks were made with locally procured cement.[65]

Theater Services of Supply

Supply and maintenance activities for U.S. forces in the theater were centralized after mid-February 1943 in a NATOUSA Services of Supply organization, with headquarters at Oran. As in other theaters the Services of Supply in MTO was subordinate to theater headquarters, but differed from comparable organizations elsewhere in that it did not control the fixed hospitals. The SOS medical section was responsible only for medical supply. Lt. Col. Theodore L. Finley, formerly medical supply officer in ABS, headed the section briefly, being succeeded in May by Col. Benjamin Norris. Col. Charles F. Shook became head of the section in August. His opposite number in the NATOUSA medical section was Lt. Col. (later Col.) Ryle A. Radke, who had first visited the theater in February on an inspection tour of supply installations and services for The Surgeon General, and joined the NATOUSA staff on 18 July.[66]

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[64] In addition to general sources cited above, see: (1) Hq, SOS, ETO, Impressions of Medical Service in NATOUSA, by Brig Gen Paul R. Hawley, Chief Surg, ETO; (2) Ltr, Lt Col Ryle A. Radke to TSG, 28 Apr 43, sub: Inspection of North Africa and the United Kingdom; (3) Surg, NATOUSA, Journal, 16–21 Jul 43.

[65] See especially unit rpts of the 26th and 45th Gen Hosps, and the 7th and 35th Sta Hosps; Diary of Col Cady. See also, Annual Rpt, Med Sec, ABS, 1943.

In carrying out its supply functions, the SOS medical section requisitioned on the zone of interior and distributed the supplies and equipment received among the base sections and combat formations in the theater. Semimonthly stock reports submitted by the base sections, and firsthand inspections, provided a basis for adjustment between depots to ensure balanced stocks in all parts of the theater. As the staff of the SOS medical section was built up during the summer, its activities broadened to include statistical reporting and research into the actual consumption of medical supplies looking toward modification of maintenance factors. Shortages revealed were made up by special requisitions on the zone of interior, and overstocks were disposed of by reshipment to the ZI, by transfer to Allied Military Government, and by diversion to fill French lend-lease requisitions.

The theater medical supply level was based on a 30-day working supply and a 45-day reserve, plus a final reserve medical unit consisting of a 90-day supply of items that might become critical in event of blockade or seige. The final reserve was discontinued in August 1943 and taken into depot stock, resulting in temporary excesses in some categories.

Professional Services

The administration of the various professional services of the Medical Department in the North African Theater of Operations was centralized in the office of the surgeon, NATOUSA, and was carried out through the appropriate subsections of the medical section.

The Medical and Surgical Consultants

In medicine and surgery the key figures on the professional side were the consultants. Lt. Col. (later Col.) Perrin H. Long, recently of the Johns Hopkins faculty, assumed the duties of medical consultant on 3 January 1943. Before the end of the month, Lt. Col. Stuart F. Alexander joined Long's staff as consultant in chemical warfare and liaison officer with G–1. Early in June Capt. (later Lt. Col.) Frederick R. Hanson became consultant in neuropsychiatry, having acted in that capacity in fact since the southern phase of the Tunisia Campaign in March.[67]

The surgical consultant, Colonel

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[66] This section is based chiefly on: (1) Hist, Med Sec, SOS, NATOUSA, Feb 43–Jan 44; (2) Annual Rpt, Med Sec, NATOUSA, 1943; (3) Rpt, Med Supply Activities NATOUSA, Nov 42–Nov 43, by Lt Col Finley; (4) Munden, Administration of Med Dept in MTOUSA, pp. 76–87. (5) Davidson, Med Supply in MTOUSA, pp. 21–27.

[67] (1) Munden, Administration of Med Dept in MTOUSA, App. A, p. 212. (2) Perrin H. Long, M.D., "Mediterranean (Formerly North African) Theater of Operations," vol. I, *Activities of Medical Consultants,* "Medical Department, United States Army," subseries Internal Medicine in World War II (Washington, 1961), ch. III. For Hanson's activities, see p. 145, above.

Churchill of the Harvard Medical School joined the staff of the NATOUSA medical section on 7 March 1943. Colonel Churchill's office was enlarged shortly before the Salerno landings to meet the increased demands of the Italian campaign. At this time Maj. (later Lt. Col.) Fiorindo A. Simeone became assistant to the surgical consultant; Maj. (later Lt. Col.) Henry K. Beecher became consultant in anesthesia and resuscitation; and Maj. John D. Stewart became consultant in general surgery. Early in January 1944, in order to make full use of the new drugs and techniques, Capt. (later Maj.) Champ Lyon became consultant in wound infections, chemotherapy, and penicillin therapy. He was assisted in the study of bacterial flora of wounds and wound recovery by 2d Lt. Robert Rustigan.[68]

The consultants made frequent inspections of medical installations within the theater. On the basis of their observations and contacts, they kept the theater surgeon informed as to professional standards in medicine and surgery. They gave professional advice on the management of patients, the procedures to be followed at various echelons of medical service, and the most suitable assignments for specialists in their respective fields in terms of proficiency, training, and experience. They also reported on the incidence and nature of wounds and injuries occurring throughout the theater.

COLONEL STONE *inspecting clothing of a lice-infested Arab in Tunisia.*

Additional consultants were used at the headquarters of the base sections and tactical commands. Some were assigned within the Table of Organization, but it was the more normal practice to attach to the theater medical section as acting consultants officers from various installations, primarily hospitals, for the purpose of appraising and standardizing technical procedures within many of the subspecialties of surgery and medicine. Thus, without having a large assigned staff of specialists, the theater medical section was able to cover a wide range of service and study in both the broad subjects and the subspecialties.

II Corps, when operating independently, and both Fifth and Seventh Armies had consultants assigned during the Tunisian, Sicilian, and Italian campaigns. Inspection of hospitals by the consultants and other members of the medical staff, including the preventive medicine officers, the medical inspector,

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[68] (1) Munden, Administration of Med Dept in MTOUSA. (2) Annual Rpt, Med Sec, NATOUSA, 1943.

ITALIAN POW's DRAINING SWAMPY GROUND *near Algiers as a malaria control measure.*

and the theater surgeon, resulted in the establishment of theater-wide professional policies and procedures. Exchange of information was facilitated by visits to British as well as U.S. installations.

Preventive Medicine

The numerous health hazards that were likely to be encountered in North Africa were fully appreciated while the campaign was still in the planning stage. A preventive medicine subsection was established under the medical section before Allied Force Headquarters left London, and was carried over into NATOUSA. The first preventive medicine officer, Maj. (later Lt. Col.) John W. R. Norton, transferred to the Services of Supply organization in February 1943. Colonel Long, the medical consultant, filled in until May when Lt. Col. (later Col.) Hugh R. Gilmore took over the functions. Lt. Col. (later Col.) William S. Stone became preventive medicine officer in August 1943 when Gilmore went to Fifth Army. Throughout the planning and early operating phases the major problems anticipated were malaria, intestinal disorders, and venereal diseases.

Malaria Control Measures—Early in January 1943 a small British-American malaria committee was named by General Cowell to study the malaria problem and to recommend preventive measures.

The group was gradually enlarged to include Air Forces and Navy representatives and French malariologists familiar with the local situation. On 20 March the committee was reconstituted as the Malarial Advisory Board, AFHQ. Colonel Long headed the American group.[69]

During the early months of 1943 an Allied policy on malaria control was worked out and measures initiated to carry it into effect. Malaria control and survey units were requested to carry out drainage and larviciding in mosquito-breeding areas but until the units arrived, Medical Corps and Sanitary Corps officers under supervision of base section medical inspectors were made responsible for enviromental control measures. In addition to this general approach, all military personnel were to take atabrine twice weekly beginning 22 April and continuing through November. The men were to sleep under netting wherever it was feasible to carry such equipment, and those on outside duty at night were to wear gloves and head nets. Repellents were also to be issued to all personnel. Infested places, such as wooded and watered ravines, were to be avoided, as were native habitations. At the same time medical officers were to be given refresher courses in diagnosis and treatment of the disease, and troops were to be indoctrinated as to its cause, control, and gross manifestations.[70]

Entomological detachments of the 10th and 13th Malaria Survey Units (MSU's) reached North Africa early in March, being assigned to MBS and ABS, respectively. Similar elements of the 11th and 12th MSU's, arriving at about the same time, were assigned to the Center District and to EBS, but did not go into operation until May, when the rest of all four units reached the theater. The 2655th Malaria Control Detachment (MCD) was brought up from Roberts Field, Liberia, in May, and was given responsibility for control work around Algiers. The 2655th MCD also gave technical assistance to other malaria units in the theater. By 1 July the 19th, 20th, 21st, and 22d Malaria Control Units (MCU's) were also in North Africa. The 14th MSU and the 23d MCU arrived in September; the 28th and 42d Malaria Control Units joined the NATOUSA antimalaria forces in October.[71] Assignments were divided between the base sections and the two armies in the theater, units being shifted from one location to another in terms of need.

Col. Loren D. Moore, commanding officer of the 2655th Malaria Control Detachment, was named theater malariologist in June, with Colonel Andrews of the same organization as assistant malariologist. Colonel Moore was relieved in September by Col. Paul F. Russell. The theater malariologist was responsible for all malaria control activities, including liaison with British and

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[69] (1) Perrin H. Long, Historical Survey of the Activities of the Section of Preventive Medicine, Office of the Surgeon, NATOUSA, 3 January to 15 August 1943. Except as otherwise noted, this section is based on the above document and on the following: (2) Annual Rpt, Asst Malariologist, NATOUSA, 1943; (3) Justin M. Andrews, "North Africa, Italy, and the Islands of the Mediterranean," vol. VI, *Communicable Diseases, Malaria*, "Medical Department, United States Army," subseries Preventive Medicine in World War II (Washington, 1963), ch. V; (4) Annual Rpt, Med Sec, NATOUSA, 1943; (5) Rpts of the base sections for 1943; (6) Unit rpts of hosps, med bns, and army, corps, and div surgs functioning in the Mediterranean in 1943.

[70] NATOUSA Cir No. 38, 20 Mar 43.

[71] Ltr, Blesse to TSG, 18 Oct 1943, Sub: Malaria Organization, NATOUSA.

French authorities, and for the direction of all organizations and personnel engaged in such work. This control extended to airplane crews engaged in the dusting of breeding places. The malaria program was thus highly centralized at the theater headquarters level. Implementing the program was a command responsibility, delegated by the Commanding General, NATOUSA, to the Commanding General, Services of Supply, and the base section commanders, who were periodically reminded of their roles in the control of the disease. At the same time, Colonel Russell used every medium the theater afforded to educate medical personnel in the fundamentals of malaria control.[72]

Malaria control in North Africa and Sicily during the period of greatest troop concentration was only moderately successful. Experience with atabrine had not been extensive enough to yield positive knowledge of the quantity to be administered or the frequency with which it should be taken, and the entire suppressive therapy program received a rude jolt from the violent reaction that generally followed the third dose, taken 30 April 1943. Men who were already reluctant avoided taking the drug whenever they could, with results that were all too evident in the morbidity figures for the Sicily Campaign.[73]

Other factors in the comparatively poor showing of the first year in the Mediterranean were the late arrival of the malaria control units, which did not get into effective operation until the breeding season was well advanced; a continuous shortage of trained malariologists; and numerous competing demands on engineering manpower, which delayed drainage work and forced various improvisations. The groundwork was nevertheless laid for an effective control program in the 1944 and 1945 seasons, in the equally malarious Italian communications zone.[74] In the Mediterranean as a whole, noneffectiveness from the disease was never great enough to threaten the success of any military operation.

Diarrhea and Dysentery—North Africa was a region, to quote the NATOUSA consultant in medicine, "in which the native considered practically every square foot of ground a privy."[75] Flies were so thick in parts of Tunisia that it was risky business to open one's mouth to speak.[76] Water was scarce and likely to be contaminated. These conditions made diarrhea and dysentery extremely prevalent.

Among troops from countries such as the United States and Great Britain, where sanitation is taken so much for granted that the individual feels little personal responsibility for it, outbreaks of these diseases were probably inevitable. They reached major proportions in May, June, and July 1943, affecting especially units newly arrived in the theater and Tunisian veterans who tended to let down after severe fighting.

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[72] CG NATOUSA, to CG's, SOS, MBS, EBS, ABS, and CD–MBS, 25 Jun 43 and 8 Jul 43.

[73] See p. 173, above.

[74] See pp. 354–57, below. Malaria control in the combat zones is treated in the chapters dealing with combat operations.

[75] Long, Hist Survey of Preventive Medicine. This report and Annual Report Medical Section, NATOUSA, 1943, are the primary sources for this section.

[76] Brig. Gen. Albert W. Kenner, "Medical Service in the North African Campaign," *Bulletin U.S. Army Medical Department* (May 1944), pp. 83–84.

It was apparent that sanitary discipline among U.S. troops was poor, but sanitation improved rapidly once an organization had been "burned." Line officers, as a rule, needed only one demonstration to remind them of their responsibilities in this regard.

Another factor in the high diarrhea and dysentery rates in the summer of 1943 was the shortage of certain necessary equipment. Screening for mess halls, kitchens, and latrines was not in adequate supply until August. Halazone tablets for water purification by individuals were not always available in sufficient quantity, while facilities for boiling water to cleanse mess kits were inadequate for most of the year.

Although both diarrhea and dysentery continued to plague troops under combat conditions, they had ceased to be a communications zone problem by the late months of 1943.

Venereal Diseases—Venereal diseases were widely prevalent in North Africa and Sicily, and the opportunities for contact were numerous. A full-time venereal disease control officer, Lt. Col. Leonard A. Dewey, was added to the staff of the NATOUSA preventive medicine section early in March 1943, and a month later similar officers were assigned to each of the base sections and to the major combat units, II Corps, Fifth Army, and Twelfth Air Force.[77]

The initial control procedure in all occupied areas was to allow troops to have access to some or all of the local brothels, and to establish prophylactic stations in the immediate vicinity. After extensive trial, during which there appeared to be no decrease in the number of contacts made outside the houses, all brothels were placed "off limits," with a noticeable decline in the VD rate.

Both mechanical and chemical prophylactic kits were always available except for brief intervals in certain forward areas, although the chemical kit was found to be of little value. Considerable difficulty was experienced, however, in securing sufficient competent personnel to operate "pro" stations in the numerous areas accessible to U.S. troops. Hospitals and other medical units were the usual sources of such personnel, but the heavy load being carried by all medical installations in the North African communications zone precluded the detachment of enough trained men for the purpose. During the last phase of the Tunisia Campaign the clearing company of the 1st Battalion, 16th Medical Regiment, operated a venereal disease diagnostic and treatment hospital south of Constantine.

Other Preventive Medicine Problems—Aside from the special problems discussed in the preceding pages, there were no serious outbreaks of preventable diseases in North Africa or Sicily before the scene of primary activity shifted to the Italian peninsula. Some 16,000 cases of infectious hepatitis reported during 1943 among U.S. Army personnel led to intensive study of the disease, which appeared considerably more prevalent in Tunisia and Sicily than in Algeria or Morocco, but, except for the last three months of 1943, the rate was not excessive. Cases did not exceed 7 per 1,000 per year until September, climbing rapidly to 108 in November and declining to 71 the following month.[78]

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[77] Main sources for this section are: (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Pers Ltr, Maj Gen James C. Magee, TSG, to Kenner, 1 Mar 43; (3) Ltr, Lt Col Leonard A. Dewey to Surg, NATOUSA, 9 Apr 43, sub: Rpt of Inspection of Venereal Disease Control Facilities in MBS and ABS; (4) Ltr, Dewey to Surg, NATOUSA, 11 May 43, sub: Trip Rpt to MBS, ABS, and Hq, Fifth Army; (5) Ltr, Dewey to Standlee, 22 Jul 43, sub: Problems in Venereal Disease Control in NATOUSA; (6) Ltr, Gen Blesse, Surg, NATOUSA, to Deputy Theater Commander, NATOUSA, 11 Aug 43, sub: Off Limits for Houses of Prostitution as a Venereal Disease Control Measure; (7) Ltr, Dewey to Surg, NATOUSA, 20 Oct 43, sub: Rpt of Inspection of Venereal Disease Control and Treatment Problems in the Palermo Area, Oct 13 to 17.

Although always a potential threat in the Mediterranean, only twenty cases of typhus were reported among U.S. personnel in the theater during 1943. An outbreak of the disease in Naples toward the end of the year is discussed elsewhere.[79] Preventive measures included use of insecticide powders to control body insects, and delousing of clothing. Malaria control and survey units were trained in mass delousing methods, as were combat medical units and operating personnel of prisoner-of-war camps. The Rockefeller Typhus Team aided materially in demonstrating powdering methods.

While respiratory diseases accounted for a larger number of cases than any other cause—63,899 in 1943—the overwhelming bulk of these were mild infections, following nonepidemic seasonal trends and not seriously affecting military efficiency.[80]

The Reconditioning Program

Early in 1943 the 21st General Hospital at Sidi Bou Hanifia near Oran inaugurated a reconditioning program for its convalescent patients, under which physical therapy was supplemented by light work in and around the hospital. While the program worked reasonably well, it posed a serious problem of control as the patients neared the time of discharge. A similar but more difficult problem was encountered at the 2d Convalescent Hospital, after that unit was set up in February, because of the smaller number of officers in proportion to patients. From a disciplinary point of view, it was simply impossible for a second lieutenant of the Medical Administrative Corps to control a convalescent company of 500 combat wounded men. In the line, even a major would not be expected to control that many men without a complete staff.[81]

The problem had become acute by the end of the Tunisia Campaign. In June the Commanding General, Mediterranean Base Section, authorized the establishment of a Provisional Conditioning Battalion of four companies with 175 men each, to be operated by the 2d Convalescent Hospital. Lt. Col. Lawrence M. Munhall, a field artillery officer who was a patient in the hospital, was detailed to command the battalion, which came to be known as the Combat Conditioning Camp. Patients were used as a training cadre, in a course lasting three weeks. At the end of this time, the men were transferred to a replacement center.[82]

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[78] (1) Annual Rpt, Med Sec, NATOUSA, 1943 (2) Rpt on Study of Epidemic Hepatitis in Tunisia, by Maj Guy H. Gowan. More serious outbreaks of hepatitis occurred among Fifth Army troops in Italy. See pp. 256–57, 513, below.

[79] Annual Rpt, Med Sec, NATOUSA, 1943. See pp. 362–65, below.

[80] Annual Rpt, Med Sec, NATOUSA, 1943.

[81] (1) Annual Rpt, 21st Gen Hosp, 1943. (2) Recorded Interv Lt Munden, and Sgt Zelen, with Lt Col Lawrence M. Munhall, 28 Jun 45. (3) Clift, Field Opns, pp. 397–99.

The Surgeon General, Maj. Gen. Norman T. Kirk, visited the theater in June 1943 and took cognizance of the problem. He undertook to have a Table of Organization for a convalescent center, similiar to those operated by the British, prepared in his office. The units were to be set up near parent general hospitals. In line with the Surgeon General's directions, British convalescent facilities were visited to study their organization and operations.[83]

As a result of these various approaches to the problem, the Combat Conditioning Camp of the 2d Convalescent Hospital was activated as the 6706th Conditioning Company Pool on 1 November 1943, with its own Table of Organization. It was thus cut off from the hospital entirely and was moved to a new area about a mile away, where it remained until it was transferred to Italy in the spring of 1944. All patients in need of reconditioning on discharge from the hospital were transferred to this unit, which remained under command of Colonel Munhall.[84]

A similar reconditioning center for the Eastern Base Section was set up at the 105th Station Hospital in Ferryville. Normally a 500-bed unit, the 105th Station became an acting convalescent hospital in September 1943 and by January 1944 had a census of 2,500 patients. In order to control these men and to restore as many as possible to active duty, an EBS Conditioning Center was set up under command of Col. Gerald P. Lawrence, including both the hospital and a replacement battalion. As rapidly as their physical condition permitted, the men were placed in one of four training companies, physically removed from the hospital and its atmosphere. While medical officers kept close check on "trainees" as they were now called, the primary supervision was by personnel of the replacement battalion. The EBS Reconditioning Center declined in importance with the decline of the base section and was closed out early in May, having handled 5,000 trainees in three months.[85]

Dental Service

The chief dental officer for the North African theater was Lt. Col. (later Col.) Egbert W. D. Cowan until the end of February 1943, when personnel limits in the NATOUSA medical section necessitated his transfer to the Services of Supply. Colonel Cowan returned to his old assignment on 1 June, when the position of dental surgeon was authorized for the medical section of theater headquarters, but was assigned to Fifth Army in August. He was succeeded as NATOUSA dental officer on 17 August 1943 by Col. Lynn H. Tingay.[86]

At the theater level, the functions of

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[82] (1) Lt Col William C. Munly, Med Inspector, NATOUSA, to Surg, NATOUSA, 2 Jul 43, sub: Inspection of Medical Activities, ABS and MBS. (2) Munhall Interv. (3) Annual Rpt, 2d Conv Hosp, 1943.

[83] (1) Memo, Col Stone to Gen Blesse, 7 Aug 43. (2) Ltr, Maj James H. Townsend and Capt Lewis T. Stoneburner to Surg, NATOUSA, 30 Aug 43, covering rpt on British rehabilitation program. (3) Ltr, Blesse to Deputy Theater Commander, 12 Sep 43, sub: Study of Convalescent Care Facilities, NATOUSA.

[84] (1) Annual Rpt, 2d Conv Hosp, 1943. (2) Munhall Interv. See also p. 357, below.

[85] Rpt on Experimental Conditioning Center: Operations, Results, Conclusions, and Recommendations. By Col Lawrence, 14 Apr 45.

[86] Annual Rpt, Med Sec, NATOUSA, 1943.

the dental surgeon were primarily administrative and supervisory. He was responsible for the provision of adequate dental service to all military personnel within the jurisdiction, which in 1943 was a considerable undertaking. There were 310 dental officers in the North African theater at the end of January 1943 and 703 at the end of December, but this increase in numbers was proportionately less than the over-all rise in troop strength. In January there was one dental officer for each 740 military personnel; in December only one for each 861.

The problem was further complicated by the presence of a considerable number of units with no dental officer in their T/O's. These units were given outpatient care by Army hospitals when such were available, but where no hospital was established in the vicinity, it was necessary to detach dental personnel for temporary duty with the unit.

The drastic lowering of dental standards for induction into the Army during 1942, reaching the irreducible minimum in October just before the TORCH operation was launched, put a severe and unexpected strain on the facilities of the theater. In the troop build-up of 1943, numbers of men reached North Africa with insufficient teeth to masticate the Army ration, but prosthetic equipment for dealing with these cases was not available until late in the year.[87]

The dental service in the theater showed progressive improvement with each campaign as personnel gained experience and facilities came to correspond more closely with needs.[88]

Veterinary Service

The veterinary section of the NATOUSA medical organization was slow in getting started. The first theater veterinarian, Lt. Col. (later Col.) Solon B. Renshaw, served only from December 1942 through February 1943. He was transferred at that time to SOS, NATOUSA, because there was no provision for a veterinarian in the limited allotment of personnel to the medical section. The position of theater veterinarian was approved late in April 1943, but was not filled until February 1944, when Col. James E. Noonan was assigned.[89]

A group of twelve veterinary officers arrived in the theater in September, having been requested by the quartermaster for inspection work in connection with local slaughterhouses, but until this program got under way, they were assigned to replacement pools and used for temporary duty. Since there was no central organization for placing veterinary personnel where they were needed, a considerable amount of waste was entailed, with some impairment of morale.

There was also a disproportionately

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[87] (1) *Ibid.* (2) Col George F. Jeffcott, *United States Army Dental Service in World War II*, "Medical Department, United States Army" (Washington, 1955), pp. 211–12. (3) Ebbe Curtis Hoff, M.D. ed., *Personal Health Measures and Immunization*, "Medical Department, United States Army" subseries Preventive Medicine in World War II (Washington, 1955), p. 4.

[88] For dental service in combat operations see the chapters devoted to specific campaigns.

[89] (1) Mundon, Administration of Medical Dept in MTOUSA, p. 213. (2) Annual Rpt, Med Sec, NATOUSA, 1943. See also, Lt. Col. Everett B. Miller, "Medical Department, United States Army," *United States Army Veterinary Service in World War II* (Washington, 1961).

high loss of food items through improper packaging, handling, and storage, which can be attributed only in part to the greater activity of the Mediterranean as compared with other theaters of operation. The comparative weakness of the veterinary service in NATOUSA was clearly apparent by the end of the year, when positive steps were taken to reorganize veterinary activities at theater and base section levels.[90]

Nursing Service

Until 14 August 1943, when the position of Director of Nurses, NATOUSA, was created, the chief nurse of the Mediterranean Base Section, 2d Lt. (later Lt. Col.) Bernice M. Wilbur acted in that capacity. Colonel Wilbur became director of nurses when the position was set up. She made regular inspections of nursing activities throughout the theater, advised the surgeon as to policy matters, and recommended assignment and transfer of nursing personnel.[91]

Nurses began arriving in the theater on 8 November 1942, D-day for the North African landings. There were more than 2,000 by the end of the Tunisia Campaign, with a peak strength of 4,398 in October 1943. This figure had dropped to 4,000 by the end of January 1944, owing to the transfer of three evacuation hospitals and an auxiliary surgical group to the European theater in November.

While the number of nurses in the North African theater was adequate in terms of hospital T/O's, the recurrent necessity for operating above normal bed capacity brought considerable strain on the nursing service. Wherever possible nurses from staging units were detached for temporary duty with operating hospitals. After October 1943, when the required authority was received from the War Department, promotions were made to raise half of all front line nurses to the rank of first lieutenant.

Training was a continuous process, with frequent changes in assignment to assure proper balance of specialties. The only severe shortages during the active period in the North African communications zone were nurses trained in anesthesia and in psychiatry. To make up these shortages, several general hospitals gave individual training in anesthesia, while a school of psychiatric nursing was conducted by the 114th Station Hospital. The courses ran for 6 weeks, taking fifty nurses at a time. Three classes completed the training during 1943. Twenty-four British nurses took the course.

Army Public Health Activities

Allied Force Headquarters as originally organized in London in the summer and early fall of 1942 included a civil affairs section, which combined with its military functions others of a political, diplomatic, and economic nature. It was headed after the invasion by Robert Murphy, the principal U.S. diplomatic representative in French North Africa. Public health activities were administered by a subsection of the civil affairs section.[92]

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[90] (1) Memo, Col Noonan to Surg MTOUSA, 11 Apr 45. (2) Ltr, Lt Col (later Col) Duance L. Cady to Surg, NATOUSA, 21 Dec 43, sub: Investigation and Survey of Veterinary Activities in NATOUSA.

[91] Annual Rpt, Med Sec, NATOUSA, 1943. See also, Maj Anne F. Parsons, and others, MS, History of the Army Nurse Corps in the Mediterranean Theater of Operations, 1942–1945.

The situation in North Africa was without precedent. The political objectives, and to a considerable extent the military objectives as well, demanded that the local population be treated as allies. Civil officials were not always cordial, and co-operation was often grudging, but in the public health area especially it was essential for the protection of American forces that elementary sanitary measures be extended to the civilian inhabitants.[93]

At Mr. Murphy's request, three United States Public Health Service doctors were detailed to AFHQ late in February 1943 and assigned on their arrival a month later to the nominally independent North African Economic Board. Shortly thereafter they were attached to the office of the NATOUSA surgeon, to serve as liaison between that office and the local health authorities. Another doctor and a sanitary engineer joined the group in July.[94]

Before the arrival of the Public Health Service officers, representatives of the U.S. component of the medical section, AFHQ, had met with French officials and had agreed upon supplies to be furnished, particularly for control of malaria and such potential threats as cholera and typhus. The surgeons of the Mediterranean and Atlantic Base Sections also maintained informal liaison with local health authorities. After the attachment of Public Health Service representatives to the NATOUSA surgeon's office, the over-all direction of a civil public health program passed to them, but Army personnel continued to play the dominant role in carrying out such measures as were required.[95]

By the date of the invasion of Sicily, a special organization for Allied Military Government of Occupied Territory (AMGOT) had been set up under a British major general, Lord Rennell, who was also chief civil affairs officer on the staff of the Allied Military Governor of Sicily, General Alexander of the 15th Army Group. The senior civil affairs officer of Seventh Army, Col. Charles A. Poletti, headed a group of seventeen civil affairs officers who went in with the invasion forces, setting up military government organizations behind the advancing troops. The principal U.S. public health officer for the Sicily Campaign was Maj. (later Lt. Col.) Leonard A. Scheele. Major Scheele participated in the planning for the Sicilian operation, serving as executive officer and later as deputy to Col. D. Gordon Cheyne, the British officer in charge of public health activities for the 15th Army Group. In the latter capacity, Scheele succeeded Col. (later Brig. Gen.) Edgar Erskine

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[92] (1) Robert W. Komer, MS, Civil Affairs and Military Government in the Mediterranean Theater, ch. I, in OCMH files. (2) Harry L. Coles and Albert Weinberg, *Civil Affairs: Soldiers Become Governors,* UNITED STATES ARMY IN WORLD WAR II (Washington, 1963).

[93] For the attitude of French officials, see Eisenhower, *Crusade in Europe,* pp. 111–12.

[94] Ralph C. Williams, *The United States Public Health Service, 1798–1950* (Washington, 1951), pp. 695-98.

[95] (1) Annual Rpt, Med Sec, NATOUSA, 1943. (2) Long, Hist Survey of Activities of Section of Preventive Medicine, Off of Surg, NATOUSA, 3 Jan–15 Aug 43. (3) Surg, NATOUSA, Journal, 12, 17 Aug, 6 Sep 43. (4) Hutter, "Medical Service of the Mediterranean Base Section, *Military Surgeon* (January 1945), pp. 41–51.

Hume, who was to accompany Fifth Army to Italy.[96]

In both Africa and Sicily, Medical Department officers assigned to AMGOT worked to restore local public health departments, to rebuild water and sewerage systems, and revitalize normal public health services. Local officials were reinforced by Army medical personnel and supplies wherever necessary to protect the health of troops in the area. Among the problems commonly dealt with were sanitation, threatened epidemics, care of destitute refugees, and the control of such ever-present scourges as malaria and venereal disease.[97]

Public health officers at the theater level made surveys to determine the status of hospital facilities, the need for medical supplies for relief purposes, the nutritional needs of the population, the presence of epidemic diseases, and the possibility of the introduction of new diseases by insect vectors on planes and by returning refugees. As combat operations by the Allies produced relatively little devastation in the French colonies in North Africa, U.S. Army participation in the public health program in these areas was largely limited to aid given by a few men trained in public health work to the French authorities after the cessation of hostilities.

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[96] (1) Komer, Civil Affairs and Military Government in the Mediterranean Theater, ch. II. (2) Williams, *The United States Public Health Service*, pp. 698–99. (3) Ltr, D. Gordon Cheyne to DCCAO, 4 Jul 43, sub: Territorial Assignment of Public Health Div Personnel.

[97] See: (1) Ltr, Col Long to Surg, NATOUSA, 27 Mar 43, sub: Rpt on the Sessions of the Committee on Hygiene and Epidemiology Technical Section for Public Health, French High Commissioner of North Africa; (2) Proceedings of Public Health Meeting, 13 Aug 43.

CHAPTER VI

Salerno to the Gustav Line

By 10 July 1943, when the invasion of Sicily was launched, Lt. Gen. Mark W. Clark's Fifth Army had been training in North Africa for six months without any specific objective. Alternative plans had been prepared for operations against Sardinia and for landings at various points in southern Italy, but a final choice was deferred until the end of the Sicily Campaign was in sight. The successful bombing of Rome on 19 July helped tip the scales in favor of the Italian mainland. The Combined Chiefs of Staff approved Operation AVALANCHE for the Naples area on 26 July, the day after the fall of Mussolini.[1] The site was eventually narrowed to Salerno and the target date fixed as 9 September.

The Italian campaign was never an end in itself. It was not intended to strike a decisive blow at Germany through the back door. Two of its purposes were to tie down enemy troops and acquire additional bases for air attacks on German centers of production and communications. After strategic air bases in southern Italy were secured, the campaign would become a giant holding operation, the success of which would be measured not in territory gained but by the size of the enemy force immobilized. It was recognized from the beginning that Italy would require appreciable quantities of food, clothing, fuel, and medical supplies to maintain her civilian population. The anticipated gains nevertheless appeared to outweigh this additional logistical burden.[2]

As in earlier Mediterranean campaigns, operations in Italy were to employ both American and British troops. The invading force was again to be the 15th Army Group, under command of General Alexander, although Fifth

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[1] General sources for the Salerno–Gustav Line campaigns are: (1) *Fifth Army History*, pt. I, *From Activation to the Fall of Naples*, pt. II, *Across the Volturno to the Winter Line*, pt. III, *The Winter Line*, pt. IV, *Cassino and Anzio* (Florence, Italy: L'Impronta Press, 1945; (2) Chester G. Starr, ed., *From Salerno to the Alps: A History of the Fifth Army, 1943–1945* (Washington: Infantry Journal Press, 1948); (3) AMERICAN FORCES IN ACTION, *Salerno: American Operations from the Beaches to the Volturno* (Washington, 1944), *From the Volturno to the Winter Line* (Washington, 1944), and *Fifth Army at the Winter Line* (Washington, 1945); (4) Craven and Cate, eds., *Europe—TORCH to POINTBLANK;* (5) Morison, *Sicily-Salerno-Anzio;* (6) Field Marshal the Viscount Alexander of Tunis, "The Allied Armies in Italy from 3rd September, 1943, to 12th December, 1944," Supplement to the *London Gazette*, 6 June 1950, pp. 2879–2918; (7) Mark W. Clark, *Calculated Risk* (New York: Harper and Brothers, 1950), pp. 183–282, 311–33; (8) Truscott, *Command Missions;* (9) Eisenhower, *Crusade in Europe;* (10) Kesselring, *A Soldier's Record;* (11) S. Sgt. Richard A. Huff, ed., *The Fighting Thirty-sixth* (San Angelo, Tex: Newsfoto Publishing Co., 1946), unpaged; (12) Taggart, ed., *History of the Third Infantry Division in World War II;* (13) Dawson, ed., *Saga of the All American;* (14) *The Fighting Forty-fifth;* (15) Howe, *1st Armored Division.*

[2] (1) Clark, *Calculated Risk*, p. 3. (2) Army Service Forces, Final Report, *Logistics in World War II* (Washington, 1947), p. 39. (3) *Logistical History of NATOUSA–MTOUSA*, pp. 331–40.

Army would replace Seventh Army with some reshuffling of combat elements. Montgomery's British Eighth Army was to cross the Strait of Messina and move over the instep of the Italian boot to seize the important Foggia air base on the Adriatic side of the peninsula. Clark's Fifth Army was to expand northward from the Salerno beachhead to occupy the vital port of Naples. Operations in Italy thereafter would be determined by circumstances and by Allied strategy for the war as a whole.

Fifth Army was to consist initially of two corps, one British and one American. The British 10 Corps, commanded by Lt. Gen. Sir Richard L. McCreery, included an armored and 2 infantry divisions, augmented by 2 Commando units and 3 American Ranger battalions. The U.S. VI Corps, under Maj. Gen. Ernest J. Dawley, included 1 airborne, 1 armored, and 4 infantry divisions. The assault troops were to be the British 46th and 56th Infantry Divisions, the Commandos, the Rangers, and the American 36th Infantry Division, the last without previous combat experience but fresh from intensive training in both amphibious and mountain warfare.

Two regimental combat teams of the 45th Division, which had been diverted to Fifth Army midway through the Sicily Campaign, were to constitute a floating reserve. The 34th, which had seen hard fighting in Tunisia, and the 3d, which had participated in the TORCH landings and fought throughout the campaign in Sicily, were to be brought in as rapidly as shipping became available. The British 7th Armoured and the U.S. 1st Armored Divisions were to be held back for later use, when terrain and circumstances warranted.

Medical Plans for AVALANCHE

Fifth Army was activated on 5 January 1943, with headquarters at Oujda, French Morocco. It was the first American field army organized overseas during World War II. The medical section, drawn in part from personnel of the task forces and in part from the United States, was initially headed by General Blesse. Col. (later Maj. Gen.) Joseph I. Martin became Fifth Army surgeon in April when Blesse became Surgeon, NATOUSA.[3]

By way of preparation for its still unspecified mission, Fifth Army established various specialized training centers, including the Invasion Training Center at Arzew, Algeria, devoted to amphibious tactics. Medical personnel participated in all training exercises. The surgeon and members of his staff made frequent inspections of medical operations in the theater, including observations of combat on the Tunisian front. From time to time members of the medical section were placed on temporary duty with the British First and Eighth Armies in Tunisia in order to study the organization of the British medical service and its methods of hospitalization and evacuation.

Medical planning for the Salerno assault was directed by Colonel Martin, with Col. Jarrett M. Huddleston, the VI Corps surgeon, participating in matters affecting the corps. A British medical officer representing 10 Corps was detailed to the planning group, and close liaison

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[3] Except as otherwise noted, sources for this section are: (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Annual Rpt, Surg, Fifth Army, 1943; (3) Glenn Clift. Field Opns, pp. 203–19; (4) Zelen, Hospitalization and Evacuation in MTOUSA; (5) Unit rpts of med units mentioned in the text.

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was maintained throughout with the medical section of Allied Force Headquarters. With certain important variations, the plans for medical service in Italy followed those carried out in Sicily.

Combat Medical Service

In addition to the medical detachments and medical battalions organic to the divisions committed, plans for the Italian campaign called for the use of one ambulance company and four medical battalions to be controlled by VI Corps. One of these—the 261st Amphibious Medical Battalion, specially trained for beach operations—could not be spared from Sicily and the 52d was substituted. The other separate medical battalions on the original troop list were the 54th, the 161st, and 162d.

The two latter units were reorganized just before the Salerno operation from the 1st and 2d Battalions, respectively, of the 16th Medical Regiment, which went out of existence at this time. Both battalions had seen combat service in Tunisia. Only the 162d was scheduled for the D-day convoy, so that it alone was organized into three collecting-clearing companies on the Sicilian model. It was the 162d Battalion that drew the beach assignment.

If this combat medical support seems inadequate in comparison to that employed in the Sicily Campaign, it must be remembered that the Salerno assault was to be made over only one relatively narrow beach and that only two American divisions were to be used, in contrast to the 4-division, multiple-beach assault in Sicily. A difference of emphasis in the plans for Italy would also bring evacuation hospitals into action at an earlier stage of the fighting. As was true in the Sicilian operation, all medical units to be employed in the Salerno landings were given rigorous training in amphibious warfare, along with the combat elements they were to serve.

The combat medical units were to be supported by elements of the 4th Medical Supply Depot on the D-day convoy. In addition to the regular maintenance allowances, medical personnel in the assault were to carry extra supplies of critical items such as plasma, litters, blankets, atabrine, plaster of paris, dressings, and biologicals. Medical supplies in specially designed containers were also to be carried ashore by the combat troops. Developed at the Fifth Army Invasion Training Center, these containers were made from empty mortar shell cases, were waterproof, and would float easily. Maximum weight was seventy pounds.

Hospitalization

Plans for hospitalization, both in the assault phase and in subsequent stages of the campaign, took full account of delays and deficiencies in bed strength experienced in previous Mediterranean operations. As in Sicily, each division (except airborne) was to be supported by one 400-bed evacuation hospital. The number of 750-bed evacuation hospitals assigned to Fifth Army, however, was double the previous allowance of one for each two divisions. General Blesse, who had been willing to abandon the 750-bed evacuation altogether after the campaign in southern Tunisia, had come to regard it as a most valuable unit when properly used.[4] In addition, four field hospitals, and a fifth less one platoon, were scheduled for the use of U.S. ground forces in Italy.

The 400-bed evacuation hospitals on the Fifth Army troop list were the 15th, with combat experience in both Tunisia and Sicily; the 93d, with Sicilian experience; and the 94th and 95th, both of which had served as fixed units in Africa. The 750-bed evacuation hospitals were the 38th, with Tunisian experience; and the 8th, 16th, and 56th, all of which had operated as fixed hospitals in the theater. Field hospitals on the troop list were the 4th, less one platoon, with experience in the Middle East; the 10th and 11th from Sicily; and the 32d and 33d, direct from the United States. The 3,000-bed 3d Convalescent Hospital was also assigned to Fifth Army for duty in the combat zone.

These mobile units were to be followed into Italy within 45 days by six 500-bed station hospitals and four 1,000-bed generals. The troop list also called for the early arrival of a general dispensary, a food inspection detachment, a hospital train, 2 medical laboratories, 2 medical supply depots, and 3 malaria control units.[5]

The troop list thus called for 9,500 mobile beds and 7,000 fixed beds, to be phased in as rapidly as the progress of the campaign and the availability of shipping permitted. Beyond this point the preinvasion planning did not extend. The further build-up of hospitals in Italy would be determined by events.

The pattern for the use of mobile hospitals laid down in plans for the beach interlude of the Italian campaign differed sharply from the plans followed in Sicily. In the earlier campaign, field hospital platoons with attached surgical teams had gone in with the D-day convoy, but no evacuation hospitals had been sent to Sicily before D plus 4. In the Italian plans, nine teams of the 2d Auxiliary Surgical Group were to be in the assault wave, attached to the divisional clearing platoons and to the beach battalion. Field hospitals were scheduled for later convoys, to be used only after the beachhead was secure; but two evacuation hospitals, the 95th (400 beds) and the 16th (750 beds), without their nurses, were to be on the D-day convoy. The nurses were to come on D plus 2.

In spite of the emphasis on the early provision of adequate hospitalization in Italy, it would still be necessary for hospitals in the Bizerte-Tunis area to carry the primary burden until sufficient fixed beds could be established on the peninsula. The Eastern Base Section was directed accordingly to make 450 beds a day available from D plus 4 through D plus 30. Corresponding arrangements were made to shift patients to the Constantine, Oran, and Casablanca areas to provide the needed beds.[6]

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[4] Col T. H. Wickert, Rpt of Visit to ETO and NATOUSA, 1 Sep to 24 Oct 43.

[5] See pp. 327ff., below.

Evacuation

Plans for evacuation from the Salerno beachhead followed the Sicilian pattern. The Navy was again to be responsible for personnel on naval vessels between ports of embarkation and the high-water mark on the landing beaches. During the first three days of the operation, American casualties were to be evacuated to North Africa on troop transports, in care of naval medical personnel, but LST's with Army medical attendants aboard would also be available if needed.[7] Thereafter, hospital ships were to be used, under direct control of Allied Force Headquarters. Two British hospital ships were to begin evacuation from U. S. beaches at dawn on D plus 3, and a third British vessel was to follow twenty-four hours later. The casualties in each case were to go to Bizerte. On and after D plus 5, hospital ships were to be dispatched to Italy on request of Fifth Army, and routed back to such North African ports as AFHQ might designate.[8]

Air evacuation was also to follow the general pattern used in Sicily, with the 802d Medical Air Evacuation Transport Squadron again drawing the assignment. This time, however, litters and blankets were given top priority on air transports from North Africa and Sicily, rather than being left for slower and less certain transportation by water. Air evacuation was to start as soon as suitable landing fields were available, tentatively forecast for D plus 7.[9]

Medical Support in the Conquest of Southern Italy

Salerno Beachhead

The Salerno landings took place as planned on the early morning of 9 September 1943. The surrender of Italy, announced over radio to the troops of Fifth Army and to the world by General Eisenhower a few hours earlier, in no way lessened the hazard of the operation. Veteran German troops, including armor and heavy guns, were already alerted in the area, with reinforcements close at hand. Mine fields held the transports twelve miles offshore and forced loaded landing craft to stand by for hours at their assembly points while channels were being cleared. All of the assault waves were met by heavy fire.[10]

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[6] AFHQ Msg 7235, Surg to CO EBS, CG MBS, CG Fifth Army, 28 Aug 43. See also pp. 196–197, above.

[7] Each LST had one medical officer and two enlisted men from the Medical Department. The officers were detached from the 23d General Hospital, then staging at Casablanca, and the enlisted men were drawn from a replacement depot in the Eastern Base Section. Surg, NATOUSA, Journal, 24 Aug 43.

[8] The Italian Campaign, Western Naval Task Force: Action Rpt of the Salerno Landings, Sep–Oct 43, pp. 213–16.

[9] (1) Med Hist, 802d MAETS, 1942–44. (2) Med Hist, Twelfth Air Force.

[10] (1) The Italian Campaign, Western Naval Task Force: Action Rpt of the Salerno Landings, Sep–Oct 43. (2) Opns Rpt, VI Corps, Sep 43. (3) *Fifth Army History*, pt. I, pp. 31–42. See also, additional sources cited at the beginning of this chapter.

The first U.S. combat teams ashore, the 141st and the 142d, met stiff opposition. One battalion of the 141st was pinned down on the beach for more than twelve hours, but other elements of the 36th Division advanced inland up to three miles. Similar gains were made in the British sector, with Ranger spearheads on the extreme left flank penetrating as far as five miles. The first day's fighting included German tank attacks against infantry positions. As in Sicily, the tanks were turned back by bazookas, grenades, and accurately directed fire from naval guns, as well as by artillery.

Medical Service in the Assault—Collecting companies of the 111th Medical Battalion, organic to the 36th Division, were split for the assault into three sections, each consisting of one medical officer and twenty-two litter bearers. One section accompanied each battalion landing team, working directly with personnel of the battalion aid station. For the first several hours of combat, medics could do little more than administer first aid. Casualties were left in ditches and foxholes, or behind dunes—whereever cover of any sort could be found—until darkness made it possible to move them. Two of the three collecting companies of the 111th were assembled by late afternoon and set up their stations on the fringes of the ancient walled town of Paestum. The clearing company landed toward evening, but could not establish station until its equipment was unloaded on D plus 1.

The only clearing stations in operation on D-day were two set up by the 162d Medical Battalion, which constituted part of the beach group attached to the 531st Engineer Shore Regiment. The beach group also included the medical section of the 4th Naval Shore Battalion and a supply dump established about noon by a detachment of the 4th Medical Supply Depot.

Casualties were gradually collected as stations were set up, and before dawn of D plus 1 substantial numbers had reached the beach installations. All units were shorthanded, with some men yet to come ashore and others wounded or separated from their outfits. In the circumstances, it was impossible to follow any rigid doctrine. Casualties were brought to the beach by whatever means were at hand, including ambulances, jeeps, trucks, and hand-carried litters. In some instances the naval shore battalion sent its own medical officers and corpsmen inland to work with the Army doctors and help bring out the wounded.

Casualties were evacuated to the transports by the naval shore battalion as opportunity offered and as small craft were available. The total from the American sector through D plus 1 was 678.[11]

The 179th Regimental Combat Team of the 45th Division was committed from the floating reserve early on 10 September, D plus 1, followed by the 157th RCT the next day. Again each battalion landing team was accompanied by its

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The medical sources primarily relied upon for the assault phase are: (4) Annual Rpt, Med Sec, NATOUSA, 1943; (5) Annual Rpt, Surg, Fifth Army, 1943; (6) Annual Rpt, Surg, VI Corps, 1943; (7) Unit rpts of div surgs, med bns, hosps, and other med units mentioned in the text.

[11] This figure, from the Report of the Fifth Army Surgeon for 1943, is considerably higher than the total of 430 for the same 2-day period listed in the records of the Peninsular Base Section later. The larger figure presumably includes Navy as well as Army casualties. See also, Table 19, p. 343, below.

Litter Bearers Wading to Landing Craft Off Salerno, 9 September

own aid station personnel and by a litter section of the organic medical battalion, in this case the 120th. Collecting companies were assembled within a few hours. The clearing company of the 120th, although it had been divided into three detachments for the landings, was reassembled on the afternoon of 10 September and opened station near Paestum on the 11th.

Evacuation from the front was following a normal pattern by D plus 2, although lengthening lines continued to be under intermittent fire. Even the beach installations were not secure as enemy planes were still in the air. One German plane was shot down and exploded a hundred yards from the clearing station of the 120th Medical Battalion. "Patients carried in but a few hours before," observed the battalion historian, "displayed unusual agility in jumping from operating tables into foxholes.[12]

Only 128 casualties were evacuated seaward on D plus 2 because of a shortage of small craft, which were being used to unload ammunition, and there was no evacuation at all on D plus 3, 12 September. The hospital ship *Newfoundland* stood offshore until dusk but was ordered to move fifty miles out to

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[12] Hist, 120th Med Bn, Sep 43.

Planners of the Invasion of Italy. *Generals Truscott, Eisenhower, Clark, and Lucas.*

sea for the night, so that her lights would not guide enemy planes to the transport area. She was bombed and sunk before she could return the next morning. Evacuation by hospital ship actually began on 13 September, D plus 4; air evacuation started four days later.

Facilities for holding casualties ashore were still inadequate, despite careful planning to avoid just such a contingency.[13] Personnel of the 95th and 16th Evacuation Hospitals had landed about noon on D-day, but their equipment was scattered and suitable sites were not yet available. The 95th had 250 of its 400 beds ready for occupancy by 0600 on 12 September. The larger 16th was not able to get into operation until midnight 14–15 September. Both units were in the vicinity of Paestum. The nurses of both hospitals had been aboard the *Newfoundland* when that vessel was bombed. Some suffered minor injuries, and all lost personal belongings. The nurses were carried back to Africa by rescuing ships and did not rejoin their units until 25 September.

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[13] Surg, NATOUSA, Journal, 13 Sep 43.

The beach clearing stations of the 162d Medical Battalion were no longer needed by 13 September and were closed on that date. For the remainder of the beach phase of the operation casualties were evacuated by collecting companies of the 162d Medical Battalion directly from the division clearing stations to the evacuation hospitals, and thence to ships or planes. No other corps or army medical battalions were available until after the breakout.

A massive German counterattack launched on 13 September drove a deep wedge between the British and American salients, penetrating to within three miles of the beach, but the ground troops finally stopped the attack with the aid of naval gunfire and Allied planes. The 504th Parachute Infantry Regiment of the 82d Airborne Division was dropped behind enemy lines at this time. With Eighth Army closing in from the south, the Germans had no time for another attempt. They withdrew slowly, fighting all the way, but by 20 September the beachhead was secure.

Coinciding with the German withdrawal there was a regrouping and reassignment of U.S. units. Maj. Gen. John P. Lucas took command of VI Corps from General Dawley on 20 September. The 3d Division replaced the battle-weary 36th in the line, and the 34th Division, which reached Salerno at about the same time, went into reserve. On the 10 Corps front, the British 7th Armoured Division entered combat.

The next phase of the campaign would carry the Allied forces to Naples and to the Volturno River beyond. The 7th Armoured and the 82d Airborne Divisions moved up the coast on the left flank, followed by the British 46th Division. The British 56th, a few miles inland, drove for Capua, while the 3d struck toward the Volturno by way of Avellino. The 45th, on the right flank, swung out in a wide arc toward Benevento, where the 34th, operating to the right of the 3d since 26 September, caught up. Attached to the 34th was the 100th Battalion, made up of American-born Japanese, which would later be part of the 442d Regiment.

Hospitalization on the Beachhead—All army medical units reverted to army control on 21 September. By this date the build-up of medical facilities was substantial, with new units arriving steadily as the campaign moved northward. The 3d and 34th Divisions were accompanied by their organic medical battalions, the 3d and 109th, respectively. The 93d Evacuation Hospital reached the area on 15 September, opening at Paestum the following day. The 94th, which arrived about the same time, was established at Battipaglia a week later. The 8th and 38th Evacuation Hospitals, both 750-bed units, and the 52d Medical Battalion disembarked on 21 September, although all equipment belonging to the 8th was lost by enemy action. Still another 750-bed evacuation, the 56th, reached the beachhead on 27 September, followed next day by the 161st Medical Battalion.

Despite the number of hospitals ashore, beds remained at a premium during the entire month of September. Many units were slow in getting into operation because equipment was lost or delayed. The rapid troop build-up made heavy demands on hospital facilities, and the disease rate—especially from malaria—was higher than had been anticipated. Typical was the experience of the 95th Evacuation Hospital, first U.S. hospital to be established on the European continent in World War II. The hospital's commander, Lt. Col. (later Col.) Paul K. Sauer, reported:

> At times we were overfilled to such an extent that all cots were in use, other patients remained on the litters on which they had been brought to us in lieu of cots, and others were given two blankets to enable them to sleep on the ground. When the tents were filled to capacity, patients were laid on the outside along the walls of the tents with their heads inside and their bodies outside. On one night even this method was insufficient to take care of all the patients and forty of them slept under the open sky between the tents. Fortunately the weather was balmy and dry.[14]

The weather did not long remain either balmy or dry. On the night of 28 September a violent storm leveled the tents of the 16th Evacuation Hospital, where 961 patients were being cared for, and did severe damage to the installations of the 95th. By heroic effort, all patients were rescued without injury and moved to a tobacco warehouse about a mile away, made available for the emergency by Services of Supply. There they were temporarily cared for by personnel of the 8th Evacuation. The tobacco factory was later operated as an annex to the 16th, by personnel of the 8th. General Blesse, who arrived on the beachhead on 25 September, had spent the preceding night at the 16th Evacuation and witnessed the destruction.[15]

As soon as the storm was over, the 38th Evacuation Hospital, still in bivouac awaiting assembling of its equipment, began setting up a hospital, using equipment borrowed from the still inactive 56th. The 38th began admitting patients at 0830, 29 September. (*Map 21*)

Across the Volturno

Combat Medical Service—During the drive to the Volturno, medical service in the field followed a normal pattern. Division clearing platoons leapfrogged one another, casualties being carried back to the beachhead by the corps medical battalions. Collecting companies of the 52d Medical Battalion took over evacuation of the 45th and 3d Divisions from the 162d on 29 and 30 September, respectively. The 34th Division, the 82d Airborne, and the Rangers were evacuated by collecting elements of the 162d Medical Battalion.[16]

The advancing troops were delayed by mountainous terrain and by the expert demolitions for which the retreating Germans were noted. The enemy chose to fight only rear-guard actions until he reached prepared positions beyond the Volturno. Avellino fell to the 3d Division on 30 September, and a reconnaissance troop of the 45th entered Benevento two days later. The British 7th Armoured Division had meanwhile

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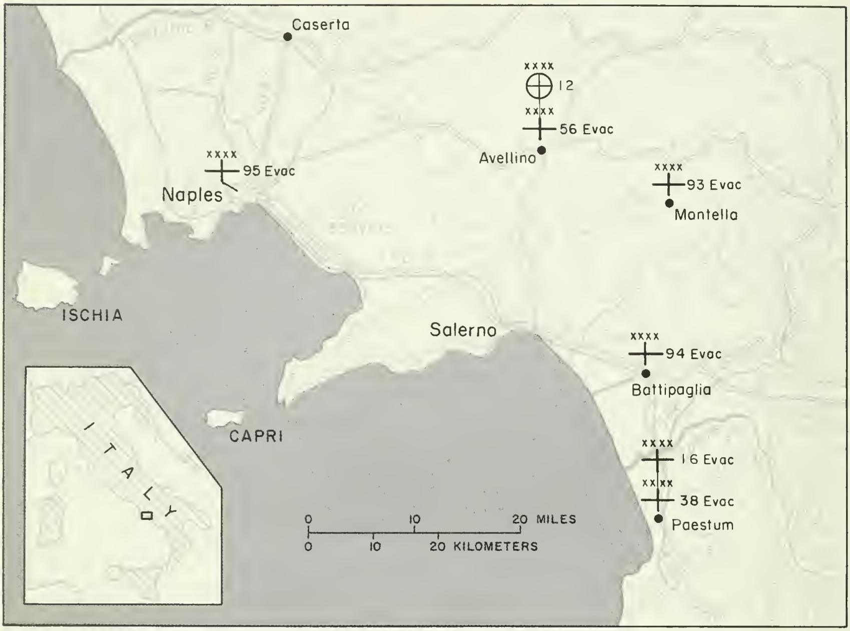
[14] Annual Rpt, 95th Evac, 1943.

[15] In addition to unit reports of the hospitals mentioned, see Col Reeder, Diary of Inspection Trip With Gen Blesse, 25 Sep–2 Oct 43. See also Ltr, Col Bauchspies to Col Coates, 15 Apr 59, commenting on preliminary draft of this volume. Colonel Bauchspies was at that time commanding officer of the 16th Evacuation Hospital.

[16] Military sources for this section are the same as those cited in previous notes, with the addition of *Fifth Army History*, pt. I, pp. 43–49; pt. II, pp. 1–55; and Opns Rpts, VI Corps, Oct and Nov 1943. Medical sources include theater, army, corps, and division surgeons' reports already cited, and unit rpts of medical units mentioned in the text.


Caserta
XXXX
12
XXXX
56 Evac
Avellino
XXXX
95 Evac
Naples
XXXX
93 Evac
Montella
ISCHIA
Salerno
XXXX
94 Evac
Battipaglia
CAPRI
XXXX
16 Evac
XXXX
38 Evac
Paestum
ITALY
0 10 20 MILES
0 10 20 KILOMETERS

MAP 21—Fifth Army Hospitals and Medical Supply Dumps, 9 October 1943

occupied Naples without opposition on 1 October, leaving the city to be garrisoned by the 82d Airborne.

As VI Corps neared the Volturno, the distance between division clearing stations and evacuation hospitals lengthened, finally approaching the 100-mile ambulance runs of the Tunisia Campaign. To cut down the long haul over bomb-scarred and blasted roads, the 93d Evacuation moved from Paestum to Montella, along the 3d Division's route to Avellino, on 2 October. In Naples, on the same date, the 307th Airborne Medical Company and a detachment from the 162d Medical Battalion opened a provisional evacuation hospital. The 307th had arrived from Sicily by boat only two or three days earlier.

By 6 October forward elements of both 10 and VI Corps had reached the Volturno River. Eighth Army, meanwhile, had captured the vital complex of airfields around Foggia on 1 October, and had moved on to extend the Volturno line to Termoli on the Adriatic.

At the Volturno, Fifth Army paused only long enough to bring up equipment necessary to replace bridges blasted by the retiring enemy, and to move artillery forward through hub-deep mud. In its upper reaches the Volturno River flows southeast, or roughly parallel to the long axis of the Italian peninsula. At the point where the Calore enters the Volturno from the east, the latter river turns west at an acute angle to reach the Tyrrhenian Sea some 20 miles north of the Bay of Naples. The south bank, from the coast to a point just east of Capua, a distance of perhaps 15 miles, was held by 10 Corps. The VI Corps front continued the river line another 15 miles to the junction with the Calore, and on eastward for a similar distance to the point of contact with Eighth Army. The 3d Division crossed the Volturno through the Triflisco Gap on the left of the VI Corps front, while the 34th crossed 8 or 10 miles farther east, near the mouth of the Calore. The 45th Division held the right flank, advancing into the mountains north of the Calore and east of the Volturno.

The 3d and 34th Divisions began crossing the river at 0200 on 13 October, after prolonged artillery preparation. Incessant rain during the first week of October had turned the normally shallow stream into a swift-flowing torrent, 200 or 300 feet wide and varying in depth from about 4 feet to the height of a tall man's shoulders. Rubber boats and rafts were used, and some swam the swollen river, but most of the men waded across, clinging to guideropes with one hand and holding their rifles overhead with the other. All crossings were made under continuous fire from machine guns and small arms on the north bank and from artillery farther to the rear.

Battalion aidmen, reinforced by litter bearers from the collecting companies of the organic medical battalions, forded the river with the assault troops. Ambulance loading posts were set up on the near shore, close to the sites previously chosen for bridging, and casualties were ferried back until dawn on rafts pulled by ropes. When daylight made further evacuation across the river impossible, casualties were held in pools on the far bank, wherever terrain afforded adequate protection.

On the 3d Division front, light bridges were thrown across the river during the first day of the attack. The engineers, working under direct observation and artillery fire of the enemy, had more difficulty in the 34th Division area, but despite the hazards managed to span the stream by the morning of 14 October. As soon as the bridges were available, collecting companies of the organic medical battalions crossed the Volturno to follow the troops. Clearing stations remained on the south bank until the bridgehead had been pushed several miles beyond the river. The 3d Medical Battalion had a station in operation north of the Volturno the morning of 16 October, and the 109th Medical Battalion clearing station, supporting the 34th Division, was functioning on the far bank by the 18th. Thereafter, until the Winter Line was reached about the middle of November, evacuation from both divisions followed the normal pattern, the clearing platoons bypassing one another as the troops advanced.

The 52d Medical Battalion took over evacuation of the 34th Division from the 162d on 17 October, thus becoming responsible for all evacuation from VI Corps.

Simultaneously with the Volturno crossings of the 3d and 34th Divisions, the 45th moved up on the east side of the river to parallel the advance. Fighting was heaviest on the lower slopes of the Matese Mountains, where the task of bringing out the wounded was formi-

Medics Treating Italian Girl Injured in the Volturno Area

dable, but the heights of Piedimonte d'Alife were gained by 17 October without undue casualties.

Enemy positions on the coastal plain, meanwhile, had proved stronger than anticipated. The British 46th Division on the 10 Corps left flank, and the 7th Armoured in the center, had forced crossings of the Volturno the night of 12–13 October, but the British 56th Division in the Capua area had been unable to cross without taking losses deemed too heavy by the Fifth Army command. Plans for further advance were therefore altered by shifting the corps boundary to the east. The 56th displaced to its right, crossing on the 3d Division bridge at Triflisco on 15 October. The 3d Division also shifted to the right, into the 34th Division sector, while the 34th crossed the upper Volturno on 19 October to a position in front of the 45th.

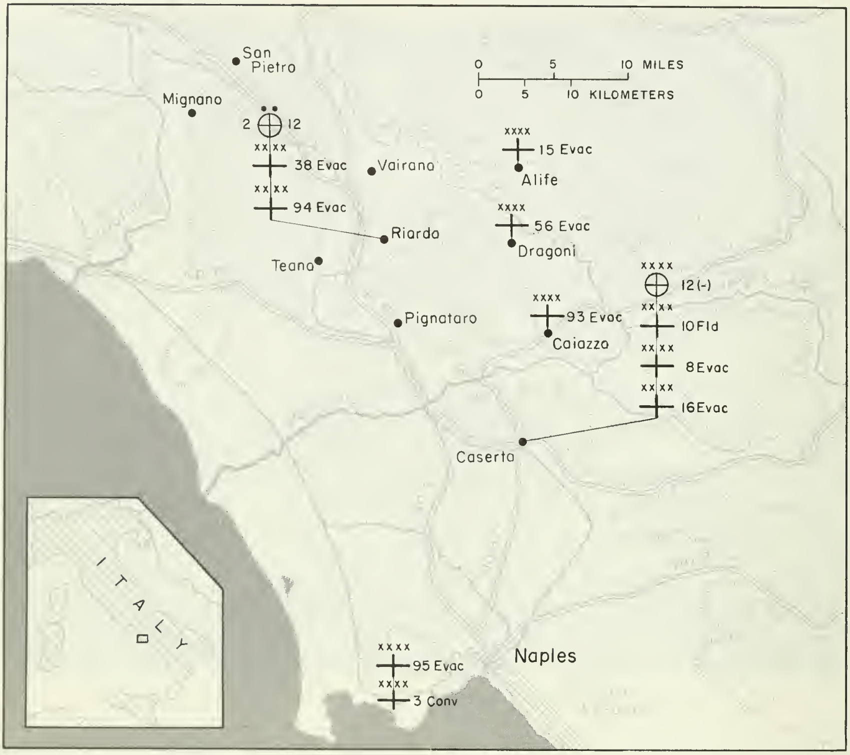
Both corps moved slowly forward against stubborn opposition for another two weeks. Then on the night of 3–4 November the 45th crossed the Volturno from east to west, south of Venafro, and the 34th recrossed north of that town, leaving the 504th Parachute Infantry, which had come into the line a few days

ROUGH GOING

earlier, to strike toward Isernia and hold the high ground on the right flank. The 3d Division struck toward Mignano Gap on the left of the corps area.

By 15 November Fifth Army had reached another German defensive position, the Winter Line. Since 6 October a strongly fortified river line had been breached and gains registered from seventeen miles along the coast to forty-five miles on the right flank of the Fifth Army front. The new line extended along the south bank of the Garigliano River to the junction with Eighth Army west of Isernia, and included the towns of Mignano and Venafro. The mountains, however, had become steadily more precipitous and the weather progressively worse. A halt was called for regrouping and reconsideration of strategy.

In the immediate combat zone, the problems of evacuation incident to a difficult river crossing were succeeded by those of mountain fighting in which the enemy was dug in on every slope in mutually supporting positions that commanded every access road and trail. Mines, booby traps, and snipers were everywhere. Each new advance was


San Pietro
Mignano
0 5 10 MILES
0 5 10 KILOMETERS
2 12
38 Evac
Vairano
94 Evac
15 Evac
Alife
56 Evac
Dragoni
Riardo
Teano
12(-)
Pignataro
93 Evac
Caiazzo
10Fld
8Evac
16Evac
Caserta
ITALY
95 Evac
3 Conv
Naples

MAP 22—Fifth Army Hospitals and Medical Supply Dumps, 15 November 1943

made in the face of machine gun and artillery fire from dominating slopes. The storming of mountain peaks was commonplace. Men suffered increasingly from exposure, and the strain began to show in a sharply rising incidence of combat neurosis.

The tasks of the aidmen and the litter bearers were the most arduous. Medical officers often worked at night by flashlight, with both doctor and patient concealed under blankets. Aid stations were generally 300 to 500 yards behind the point of contact with the enemy, but were sometimes as much as a week ahead of their vehicles, restricting them to such drugs and equipment as could be hand-carried. The numerous caves found in the Italian mountains were often used for aid station sites because they could be blacked out, and because they offered a measure of protection from rain, snow, and enemy shells. Collecting stations were eliminated wherever possible, but when used were 1 to 4 miles behind the lines, with clearing stations 6 or 8 miles farther to the rear. The irregularities of the front, however, and the exigencies of mountain fighting not infrequently brought clearing stations within range of enemy guns. Six-man litter squads were usually necessary, with carries often taking eight to twelve hours. When the corps medical battalions were drained of personnel, additional litter bearers were supplied from the combat units. Casualties among medics, and particularly among litter bearers, were high.[17]

Hospitalization—To keep the ambulance runs relatively short, Fifth Army hospitals moved into the combat zone as rapidly as suitable sites became available, with the 400-bed evacuations leading the way. The 95th opened in Naples on 9 October. The 93d moved hastily from Montella to Avellino on 11 October, after bombed-out bridges and swollen streams threatened to isolate the unit; then advanced again on 24 October to Piana di Caiazzo, where it was the first American hospital north of the Volturno. The 94th shifted from Battipaglia in the Salerno area to take over an Italian military hospital in Maddaloni, where it opened on 11 October. November 5 saw the 94th Evacuation in Riardo, a dozen miles north of Capua. Still farther forward, the 15th Evacuation, newly arrived from Sicily, opened at Alife east of the Volturno, on 2 November. (*Map 22*)

The 750-bed evacuation hospitals also moved up to new locations during the period of the Volturno campaign. The 56th opened at Avellino on 6 October, shifting to Dragoni across the river from the 15th on 2 November. The 8th and 38th Evacuation Hospitals opened in Caserta on 16 October, followed by the 16th Evacuation on the last day of the month. The 38th moved on to the Riardo area, just north of the site of the 94th, on 8 November.

The field hospitals, as already noted, were late in coming into the theater, and were used only in part for direct support of the army. The 32d Field opened in Caserta on 16 October, where it functioned for ten days as an evacuation hospital before being attached to the base section. The 10th Field moved into Caserta on 29 October, also functioning as an evacuation hospital. The 11th Field, though in the theater, was inactive until the next phase of the campaign. The two available platoons of the 4th were assigned to the base section as an air evacuation holding unit.

Only the 33d Field Hospital performed services similar to those of the field units in the Sicily Campaign. One platoon of the 33d joined the 120th Medical Battalion on 17 October, operating with the 45th Division clearing station as a holding hospital for nontransportables and for forward surgery. Another platoon of the 33d joined the 11th Medical Battalion, in Army reserve with the 36th Division, on 21 October; and the remaining platoon went into the combat area with the 109th Medical Battalion, in support of the 34th Division, the following day. All three platoons were reinforced by teams of the 2d Auxiliary Surgical Group.

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[17] (1) Capt Robert L. Sharoff, The Infantry Battalion Aid Station in Operation, Med Hist Data, 3d Med Bn, 23 Oct 43. (2) Ltr, Col W. W. Vaughn to Brig Gen R. W. Bliss, 18 Jan 44, sub: Observations From Overseas Casualties. (3) Annual Rpt, Surg, 34th Div, 1943. (4) Hist, 120th Med Bn, Nov 43.

The 3d Convalescent Hospital was also assigned to Fifth Army from its arrival in the theater on 10 October, but functioned in Naples rather than in the forward area until near the end of the year.

The Winter Line

Fifth Army was substantially reorganized during the last two weeks of November, before launching a direct assault against the fortified positions of the German Winter Line. The headquarters of II Corps, now under General Keyes, arrived from Sicily in October. On 18 November the 3d and 36th Divisions were assigned to II Corps, which took over the center of the Fifth Army front. The British 10 Corps remained on the left flank; the 34th and 45th Divisions, making up VI Corps, were on the right.[18]

The 36th Division, out of combat since 20 September, began to relieve the 3d on 17 November, the 3d going into bivouac for a rest. The strength of II Corps was maintained, however, by attachment of the 1st Italian Motorized Group on 22 November and of the 1st Special Service Force the following day. The 1st Special Service Force, a commando-type unit with six battalions organized into three "regiments," had a strength equivalent to one regimental combat team—about 5,000 men. It was composed of U.S. and Canadian troops, specially trained for mountain fighting and in raiding tactics.

Three Ranger battalions and elements of the 504th Parachute Infantry were also at the front, to be used as the army commander might direct. The 1st Armored Division began unloading at Naples on 15 November and went into Army reserve. Two French divisions, the 2d Moroccan and the 3d Algerian, were also on the way from North Africa as components of a French Expeditionary Corps (FEC) under General Juin.

In addition to medical units already in the Fifth Army area, the 54th Medical Battalion and the 11th Field Hospital were assigned to II Corps. The Italian and French units under Fifth Army command had their own medical organizations, including field and evacuation hospitals.

The Winter Line proved to be only a series of strongly held outposts a few miles in front of the heavily fortified Gustav Line, where the Germans planned to make their main stand. The key to the Gustav Line was Monte Cassino, dominating the entrance to the Liri Valley through which Highway 6 and a doubletrack railroad ran northwest to Rome, a distance of about eighty miles. The approach to the Liri Valley lay through the Mignano Gap, known to the troops as Purple Heart Valley, which was controlled on either side by German-held mountain masses and barred at its outlet by the Rapido River. The plan of campaign called first for driving the enemy from his mountain stronghold, and then forcing a crossing of the Rapido south of Cassino, at the same time executing a wide flanking movement through the mountains northwest of the town.

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[18] Military sources for this section include: (1) Opns Rpts, VI Corps, Nov 43–Jan 44; (2) Opns Rpts, II Corps, Nov 43–Jan 44; (3) *Fifth Army History*, pt. III. Citations to additional military sources will be found at the beginning of this chapter. Medical sources for the Winter Line campaign include: (4) Annual Rpt, Med Sec, NATOUSA, 1943; (5) Annual Rpt, Med Sec, MTOUSA, 1944; (6) Annual Rpts, Surg, Fifth Army, 1943, 1944; (7) Annual Rpts, Surg, VI Corps, 1943, 1944; (8) Annual Rpts, Surg, II Corps, 1943, 1944; (9) Unit rpts of div surgs and med units mentioned in the text.

The attack began on 1 December with an assault against the Camino hill mass south of the Mignano Gap. The main effort was directed at the left flank by the 46th and 56th Divisions of 10 Corps, while the Special Service Force of II Corps attacked simultaneously from the right. The infantry advance was preceded by the heaviest concentration of artillery fire yet used in the Italian campaign, but the result was indecisive. It was still necessary for foot soldiers to scale the heights and storm the enemy positions one by one. The operation was rendered still more hazardous by three days of continuous rain. Both lines of advance and lines of supply were under enemy fire, while bad weather prevented any effective air support. The entire Camino complex was nevertheless secured by 9 December.

The 34th and 45th Divisions of VI Corps were meanwhile attacking northwest from Venafro with the ultimate objective of outflanking Cassino by taking Sant'Elia and Atina. The VI Corps attack, launched on 29 November, was slow and costly. By 4 December the 34th Division, on the left, had gained about a mile, at a cost of 777 casualties. The 45th continued to inch forward for another five days, taking several important hill positions but making little headway toward its goal.

In the second phase of the Winter Line campaign, II Corps was to seize Mt. Sammucro, which formed the northern rampart of the Mignano Gap, and Mt. Lungo, which cut the center of the valley. VI Corps, with the 2d Moroccan Division replacing the 34th, was to try again for Sant'Elia and Atina. The II Corps objectives were taken by 17 December, after bitter seesaw battles for every knob and crest, but VI Corps again failed to make substantial headway in its flanking attack. Lack of reserves for speedy exploitation of gains was an important factor.

Mt. Trocchio, the last mountain stronghold before Cassino, was II Corps' major objective in the third phase of the Winter Line campaign. The position was taken, again after slow and bitter fighting, by noon of 15 January 1944, but the crossing of the Rapido was delayed for another week by the failure to outflank Cassino from the north, and by an over-all change of plans.

General Alexander, commanding the 15th Army Group, issued orders on 2 January for the seaborne flanking movement to Anzio, and VI Corps was assigned the operation. A reshuffling of Fifth Army forces gave the 45th and 3d Divisions to VI Corps at this time. The 34th Division went back into the line as a II Corps unit, replacing the 36th, while the 3d Algerian Division relieved the 45th. The VI Corps sector was taken over by the French Expeditionary Corps the first week in January. The 1st Armored, which had been attached to II Corps about 15 December in hopes of a breakthrough into the Liri Valley, remained temporarily in the line, but went ultimately to VI Corps for the Anzio landings.

The capture of Mt. Trocchio brought Fifth Army up to the main defenses of the Gustav Line. During two months of rugged mountain fighting in the foulest kind of weather, the Allied forces had advanced an average of five to seven miles. Casualties had been heavy, but battle fatigue and exposure had taken an even greater toll. The enemy too had suffered heavily, but he appeared to have gained his purpose of achieving a winter stalemate. Eighth Army had driven up the Adriatic coast as far as Ortona, but Montgomery's forces also failed to force a passage through the rocky fastnesses of the central Apennines to Rome.

Battlefield Evacuation—As in the Volturno campaign, the primary medical problem of the Winter Line was evacuation of casualties from the battlefields. The difficulties inherent in carrying wounded men down steep, boulder-strewn slopes, often in total darkness, were aggravated by cold and almost incessant rain or snow. Main highways were frequently under enemy fire and were overburdened with a steady stream of combat equipment. Secondary roads and trails were so deep in mud that ambulances could rarely come within five miles of the lines.

All available litter bearers of the corps medical battalions were assigned to the divisions, and these were periodically supplemented by assignment of combat personnel. Toward the end of the year, AFHQ authorized the addition of 100 litter bearers to each organic medical battalion. Continuous replacements were necessary at all levels of the medical service. Litter bearers were exposed to the same hazards as the combat troops. Many of them camped along the evacuation routes, but without the protective clothing worn by the infantrymen. Casualties among medical officers were also high, but the only available replacements were men from fixed hospitals in the base sections who lacked both battle experience and conditioning. Collecting companies were used sparingly, and where used were reduced to one medical officer each. Medical officers of the corps medical battalions were often detached for duty with the divisional medical units.[19]

A variety of expedients were adopted to speed the process of evacuation. Casualties from the 34th Division were brought down from Mt. Pantano by litter bearers who lined both sides of the trail and passed litters from hand to hand over their heads.[20] Litter carries ran as long as 12 to 15 hours, with 6-man squads working in relays. The 109th Medical Battalion reported using 16 such squads to move casualties over a 5-mile stretch on 12 January 1944. On the longer routes, aid stations were set up along the way to supply first aid, plasma, and hot drinks, and to give walking wounded a chance to rest. The 120th Medical Battalion used pack mules to bring out trench-foot cases, and experimented with a mule-carried litter, apparently unaware of the similar experiments carried out by the 9th Medical Battalion in Tunisia and Sicily. Experiments were also made with a modified breeches buoy, improvised from an equipment line, for lowering casualties down precipitous slopes.[21]

Some indication of the magnitude of

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[19] (1) Pers Ltr, Gen Blesse, Surg, NATOUSA, to Gen Kirk, 26 Nov 43. (2) Surg, NATOUSA, Journal, 23 Dec 43. (3) Med Hist Data, 54th Med Bn, 26 Sep 44. See also, reports of div surgs and med bns mentioned elsewhere in the text.

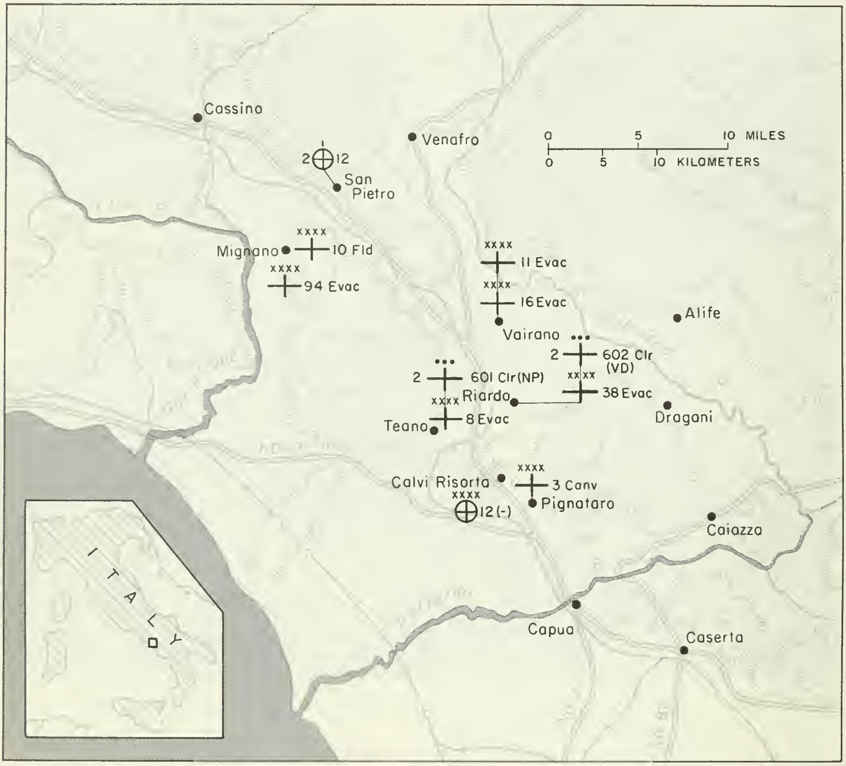
[20] Bull of the U.S. Army Medical Department (July 1944), p. 26.

[21] Clift, Field Opns, p. 250–a.

Wounded Man Being Dug From Debris Near Cassino

the evacuation problem may be gathered from reports of the two corps medical battalions primarily responsible for moving casualties from clearing stations to the mobile hospitals in the combat zone. The 52d Medical Battalion evacuated 25,125 sick and wounded from division clearing stations between 30 September and the end of the year. Between 15 November and 15 January the 54th Medical Battalion evacuated 16,186 patients. Even these figures do not tell the whole story, since some evacuation before 15 November was handled by the 162d Medical Battalion, while the 52d continued to operate through January.

Hospitalization—The heavy casualties of the Winter Line campaign, coupled with transportation difficulties over muddy and congested roads, soon made it necessary to bring more hospital beds into the combat area. The 95th Evacuation Hospital moved up from Naples on 28 November to a site just beyond the Volturno northwest of Capua, where it was joined by the 10th Field from Caserta on 1 December. The 15th Evac-


Cassino
Venafro
0 5 10 MILES
0 5 10 KILOMETERS
2 12
San Pietro
XXXX
Mignano
10 Fld
XXXX
94 Evac
XXXX
11 Evac
XXXX
16 Evac
Vairano
Alife
2
602 Clr (VD)
2
601 Clr (NP)
XXXX
38 Evac
XXXX
Riardo
Teano
8 Evac
Dragoni
XXXX
Calvi Risorta
3 Conv
XXXX
12(-)
Pignataro
Caiazzo
Capua
Caserta
ITALY

Map 23—Fifth Army Hospitals and Medical Supply Dumps, 15 February 1944

uation moved from Alife, east of the Volturno, where it had twice been flooded, to Riardo, where the 38th and 94th were already operating, on 15 December. The 8th Evacuation opened at Teano, in the same general area, the following day, while the 16th Evacuation moved from Caserta to Vairano on 28 December. For all hospitals, siting was a problem for the engineers, with mud the ever-present obstacle to be surmounted. The 93d and 95th Evacuation Hospitals, designated for the Anzio operation, were closed early in January 1944, but their places were taken by the 3d Convalescent, which opened at Pignataro Maggiore on 6 January, and the 11th Evacuation, which arrived from Sicily in time to open at Vairano on 14 January. (*Map 23*)

With the exception of the 56th Evacuation at Dragoni and the 93d at Piana di Caiazzo, all of these Fifth Army hospitals were strung out along Highway 6, within a 10- or 12-mile stretch. The medical installations in the army area, including clearing and collecting stations, all suffered more or less severe damage in a New Year's Day storm, the 15th, 38th, and 94th Evacuation Hospitals being the hardest hit. All patients of the 15th and 38th had to be moved, as well as most of those of the 94th.

The Cassino Stalemate

By way of prelude to the Anzio landings, which were scheduled for 22 January 1944, Fifth Army sought to engage the maximum German strength by way of a direct assault against the Gustav Line. The French Expeditionary Corps on the right led off on 12 January with a 3-day drive that carried General Juin's colonials to the mountains north of Cassino. General McCreery's British 10 Corps, with the 5th Infantry Division substituted for the 7th Armoured, crossed the lower Garigliano near the coast on 17 January. By the 20th of the month, the 5th and 56th Divisions had secured a bridgehead extending to high ground north of Minturno, but the 46th Division had failed to get across the river farther upstream, near the II Corps sector.[22]

Carnage Along the Rapido—The main assault was launched by General Keyes' II Corps in the center of the Fifth Army front on the night of 20 January, only a few hours before the Anzio armada sailed from Naples. The assignment was probably the most difficult of the entire Italian campaign. The U.S. 36th Division, commanded by Maj. Gen. Fred L. Walker, was to cross the Rapido below Cassino in the vicinity of Sant'Angelo, seize that town, and advance as far as Pignataro Interamna. Combat Command B of the 1st Armored Division was to pass through the 36th and exploit up the Liri Valley, while the 34th Division was to create a diversion before Cassino and be prepared to attack from east or south, or to follow the armor through the 36th, as circumstances dictated. The 45th Division was in reserve, to be thrown into the Cassino battle or be shipped to Anzio as the tide of battle might require.

It was a very large order. Cassino and the mountains surrounding it were heavily fortified anchor points in the Gustav Line, from which enemy artillery could rake the whole line of the Rapido River and cover the Liri Valley with cross fire. The river, itself, at that point, was a swift-flowing stream 25 to 50 feet wide and 9 to 12 feet deep, with high, brush-covered banks on either side. The approaches had been skillfully and lavishly strewn with mines, and the low ground was waterlogged by deliberate flooding. On the German side the ground was higher, with the town of Sant'Angelo perched on a 40-foot bluff that gave perfect observation. Mines and wire entanglements were backed up by a belt of dugouts and concrete pillboxes, from which the entire river line could be blanketed by machine gun fire. The failure of the British 46th Division to cross the Garigliano earlier in the day, moreover, had left the southern flank unsecured.

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[22] The chief military sources for this section include: (1) *Fifth Army History*, pt. IV, pp. 27–57, 87–100, 175–85; (2) Opns Rpts, II Corps, Jan–Apr 44; (3) Huff, ed., *The Fighting Thirty-sixth*. See note at the beginning of this chapter for additional sources. The more important medical sources are: (4) Annual Rpt, Med Sec, MTOUSA, 1944; (5) Annual Rpt, Surg, Fifth Army, 1944; (6) Annual Rpt, Surg, II Corps, 1944; (7) Unit rpts of div surgs, med bns, and other med units mentioned in the text.

After concentrated air and artillery preparation, the 141st Regimental Combat Team moved through the mine fields to its crossing points north of Sant'Angelo, while the 143d RCT took up positions along the Rapido south of the town. The Germans were neither surprised nor unprepared. Artillery, rocket projectors, and automatic weapons met the assault. Boats were destroyed before the launching or sunk in midstream. Bridges were knocked out before they were in place. Only a handful of men from the 141st reached the western bank, and the somewhat larger number from the 143d who achieved the crossing were quickly immobilized. Before dawn those able to return were recalled.

A second attempt the following day was only slightly more successful. Fog and smoke screens covered the crossings, but the German guns were zeroed in. One battalion of the 143d RCT and elements of the 141st managed to advance a half mile or so beyond the river, but reinforcement and resupply were alike impossible. The men were driven back to the river, and those who could not withdraw were isolated. When ammunition gave out, the battle was over. The 36th Division had been badly beaten.

Although many of the wounded could not be reached, and others could be brought out only with great difficulty, 308 battle casualties were processed through the clearing station of the 111th Medical Battalion on 21 January and 291 the following day. With only five medical officers available to handle this record flow of wounded, it was impossible to retain them long in the clearing station. The nontransportables were transferred immediately to a platoon of the 11th Field Hospital, which was adjacent. Those who could stand the journey were sent back by ambulance and truck to the evacuation hospitals, which were still concentrated along Highway 6 from Vairano, twenty miles behind the front, to Capua on the Volturno. Transportation was supplied by the 54th Medical Battalion.

When the Sant'Angelo sector quieted, a truce was arranged for 25 January from 1400 to 1700, and litter bearers from two collecting companies of the 111th Medical Battalion crossed the Rapido to remove the dead and wounded. A German guide led them through the mine fields and up to the barbed-wire entanglement about 10 yards from the stream. There German medics turned over 12 American wounded, stating that 18 more were in the German hospital. An opportunity to inspect these was offered, but time did not permit. The dead were so numerous that all could not be removed in the 3-hour period of the truce.

The 2-day "battle of guts" cost the 36th Division 2,019 officers and men in killed, wounded, and missing, of whom 934 were wounded.[23]

Frustration at the Gustav Line—The failure of the 36th Division to establish a bridgehead in the Liri Valley forced a quick change in plans. The French Expeditionary Corps, which had renewed its drive on 21 January, was ordered to concentrate its strength on its own left flank, while the 34th Division attempted a crossing of the upper Rapido just below the village of Cairo, at the boundary of the II Corps and FEC sectors. The 34th jumped off the night of 24 January.

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[23] Annual Rpt, Surg, Fifth Army, 1944, p. 40. *Fifth Army History*, pt. IV, p. 47, gives a total of 1,681, broken down into 143 killed, 663 wounded, and 875 missing but the surgeon's figures, based on unit reports, appear the more reliable.

Enemy positions were much the same as those encountered by the 36th Division farther south, but this time the bridgehead held. First across the river, on the morning of 25 January, was the 100th Battalion. Other elements of the 133d Regimental Combat Team followed, and all held grimly to their gains through the night of 25–26 January. The 135th RCT forced another crossing just north of Cassino in the early hours of 26 January, and the 168th crossed the next day, with four tanks. The engineers got more tanks across early on the 29th, in time to help repel a determined counterattack. To exploit the gains, the 142d RCT of the 36th Division, which had not participated in the earlier action, was attached to the 34th Division, and with the French Expeditionary Corps gained commanding heights north of Cairo. The bridgehead was secure by 31 January.

For the next two weeks II Corps threw all its strength and battle toughness into an effort to break through the Cassino defenses and cut Highway 6 behind the main German positions. The fighting was hard, close, and continuous. On 2 February elements of the 34th Division broke into Cassino itself, and on the 5th a patrol reached the walls of the Benedictine monastery high above the town. The 36th Division, decimated though it was, went back into the line. About a third of the mountainous area northwest of Cassino was overrun, and a decisive triumph seemed almost at hand. The Germans, however, were furiously reinforcing their crumbling lines, and the Allied drive was stopped a bare mile short of Highway 6. On 12 February II Corps went over to the defensive. During the next ten days the 34th and 36th Divisions were relieved by Lt. Gen. Sir Bernard Freyberg's New Zealand Corps, made up of the New Zealand 2d Division, the Indian 4th Division, and the British 78th Division, all from the Eighth Army front.

The pattern of evacuation during the period from 24 January to 14 February resembled that of the Winter Line campaign. Litter carries were long, difficult, and exhausting since vehicles were unable to penetrate far into the mountainous area where the fighting was in progress. Again more litter bearers were essential. The 54th Medical Battalion loaned all that could be spared, averaging about 150, to the collecting companies of the divisional medical battalions. Others were recruited from among Italian labor troops, and still others were combat replacements not yet committed to battle. But the bulk of them came from noncombat elements of fighting units and from among fighting men themselves. Over 800 additional litter bearers were used by II Corps on the Cassino front in January and February 1944.

Casualties were heavy during the battle for the bridgehead, but became even heavier as tired troops penetrated the main defenses of the Gustav Line. The clearing station of the 109th Medical Battalion, supporting the 34th Division, had its busiest day on 3 February, when 430 patients, 268 of them with battle wounds, were processed. For the en-

Returning Wounded From the Rapido, January 1944

tire period from 24 January to 19 February, when relief of the 34th Division was completed, 4,795 patients passed through the division clearing station, of whom 2,248 were battle casualties. For the 111th Medical Battalion clearing station, the total processed was 5,709, including 1,733 wounded in action, for the period from 18 January to 22 February during which elements of the 36th Division were in the line.

The 54th Medical Battalion was taxed to the utmost to provide transportation to the rear. In order to shorten the ambulance run as much as possible, two hospitals were displaced forward along Highway 6 during the Cassino assault. The 10th Field moved from Capua to a site four miles southeast of Mignano on 28 January. It was leapfrogged on 11 February by the 94th Evacuation from Riardo. Set up just south of Mignano, the 94th was the farthest forward of any Fifth Army hospital on the Cassino front. For a time all hospitals in the army area were so crowded that orderly scheduling of admissions was impossible.

After the relief of II Corps, medical units accompanied the badly battered 34th and 36th Divisions to rest areas be-

AID STATION IN SANT'ELIA AREA, *smoke from a German shell rising in the background.*

hind the lines. Neither division returned to combat on the southern front. The New Zealand Corps renewed the attack on Cassino, 15–20 February, but, aside from destroying the monastery, achieved no more success than had the Americans. The Cassino front lapsed into inactivity until 15 March, when the New Zealand Corps launched a second drive, preceded by the heaviest air and artillery bombardment of the Italian campaign. But again the Gustav Line held, and the frontal attack was abandoned.

Hospitalization in the Army Area

Hospitalization Policy

All hospitalization in the army area throughout the Italian campaign was centrally controlled by the Fifth Army surgeon. As long as the line of evacuation lay along a single highway, as in the first days of the breakout from the Salerno beachhead, it was possible to funnel casualties through one ambulance control point, where they were routed to the available evacuation hospitals in groups of fifty at a time. Since there was no sorting of casualties at the control points, however, the actual burden on the hospitals proved very uneven and treatment of some patients was unnecessarily delayed.[24]

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[24] Except as otherwise noted, this section is based on the reports of the Fifth Army surgeon for 1943 and 1944, and on the reports of the individual hospitals and medical battalions functioning in the Fifth Army area.

As the troops advanced toward the Volturno, one evacuation hospital was designated for the support of each division, but since some units encountered much stiffer opposition than others, this system, too, proved unsatisfactory. Under combat conditions, it was found that one evacuation hospital could not safely handle more than 100 surgical admissions in a 24-hour period. When the designated hospital was filled, casualties had to be rerouted to other installations, with consequent delay in treatment and longer immobilization of ambulances.

With the establishment of additional hospitals in the army area toward the end of the year, two evacuation hospitals were assigned to receive casualties from each division. One hospital took all admissions for twenty-four hours; then closed to catch up and rest its personnel while the other took over for a similar period. This system, like its predecessor, proved only partially successful, since the casualty load varied markedly from day to day with the progress of the fighting. It remained in effect only until late January 1944.

The plan next put into effect continued throughout the remainder of the war in Italy. Hospitals were arranged in depth along the axis of evacuation to the rear. Corps evacuation officers were informed early each morning by the Fifth Army evacuation officer, Maj. (later Lt. Col.) Ralph A. Camardella, how many surgical and how many medical cases they might send in the course of the day to each hospital in stated sequence. Under this system, no hospital would be overburdened unless the aggregate casualties for the day exceeded the combined quotas of all the hospitals in the area.

Specialization

A major factor in the orderly working of this system was the increasing use of specialized facilities to siphon particular types of cases. Toward the end of October 1943, following the pattern established in Sicily, field hospital platoons were set up adjacent to the division clearing stations for forward surgery and retention of patients whose further transportation would be hazardous. Keeping these patients in the division area lightened the burden on the evacuation hospitals. After the 10th Field Hospital moved into the Capua area at the beginning of December, its facilities were used primarily for medical cases whose hospital expectancy did not exceed twenty-one days.

A further development late in 1943 was the more consistent use of clearing companies of the army medical battalions for hospitalization. Both the 161st and 162d Medical Battalions were reorganized in October to give each clearing platoon 250 beds, instead of the 125 previously assigned. Additional personnel needed to operate the larger units was drawn from the collecting companies. These expanded platoons were then used to increase the bed strength of the forward hospitals. One clearing platoon of the 162d was attached to the 56th Evacuation Hospital at Dragoni from 6 November to 21 December, while the other clearing platoon of the same battalion served to augment the facilities of the 15th Evacuation Hospital during its stay at Alife. An expanded clearing platoon of the 161st Medical Battalion was attached to the 10th Field Hospital near Capua, where it served as a convalescent ward. At its Vairano site, the 16th Evacuation Hospital also used a clearing platoon as a convalescent ward during most of January 1944.

Late in December the use of clearing platoons as hospitals was carried another step forward. On the 21st of that month a platoon of the 162d opened as a venereal disease diagnostic and treatment center, and ten days later a platoon of the 161st, with psychiatrists and other additional personnel attached, became the Fifth Army Neuropsychiatric Center. Both of these special hospitals were in the vicinity of Capua until the end of March, when a general resiting of Fifth Army hospitals took place.[25] The movement of the 3d Convalescent Hospital into the army area early in January completed the establishment of specialized facilities immediately behind the lines. In sum, these units went far toward freeing the evacuation hospitals for their primary mission, the treatment of battle wounds.

The use of specialized facilities in the army area was also designed to save for combat duty as large a proportion of those hospitalized as possible. Medical cases such as respiratory diseases, fevers of various types, jaundice, dysentery, venereal disease, and trench foot could usually be treated close to the front and, with convalescent beds available, could often be held long enough for a cure. Specialization also permitted adequate care by the minimum number of medical officers.

The extensive employment of specialist personnel was another feature of the Fifth Army system of hospitalization. In addition to the medical specialties represented by the establishment of separate hospitals for venereal disease and neuropsychiatric cases, twenty-five teams of the 2d Auxiliary Surgical Group were employed in field hospital platoons and in evacuation hospitals. Wherever possible, Medical Corps officers were replaced by officers of the Medical Administrative Corps, despite the resistance of unit commanders in the field. Fifty MAC's had been so assigned before the Winter Line was reached, and twenty-five more had been requested.[26] These officers were used in supply, operations, personnel, records, and other administrative positions and increasingly, when the shortage of medical officers became acute, as assistant battalion surgeons and in the collecting companies where evacuation rather than medical care was the primary mission.

Statistical Summary

U.S. bed strength in the Fifth Army area as of 15 January 1944, including field hospital platoons with the division clearing companies, clearing platoons used as expansion units, the neuropsychiatric and venereal disease hospitals, and hospitals staging for Anzio, was approximately 10,000. The total remained the same at the end of April, though it was divided between the Cassino front and the Anzio beachhead. Hospital admissions from Fifth Army to U.S. installations from 9 September 1943 through 30 April 1944 are shown in Table 5. It should be borne in mind that the figures for January, February, March, and April include hospital admissions on the Anzio

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[25] See pages 255–56, 258–59, below, for more detailed discussion of the NP and VD hospitals. The resiting of hospitals before the Rome-Arno Campaign is treated on pages 290–91, below.

[26] Pers Ltr, Gen Blesse to Gen Kirk, 17 Nov 43.

TABLE 5—HOSPITAL ADMISSIONS FROM FIFTH ARMY, 9 SEPTEMBER 1943–30 APRIL 1944[a]

Month and Year	All Causes	All Nonbattle	Disease	Injury	Battle Casualties	Mean Strength
1943						
September	9,400	5,849	4,836	1,013	3,551	114,004
October	21,758	18,909	16,609	2,300	2,849	193,090
November	20,317	16,420	14,639	1,781	3,897	202,253
December	29,996	25,046	22,367	2,679	4,950	199,006
1944						
January	25,787	20,793	18,361	2,432	4,994	205,136
February	23,477	16,029	14,229	1,800	7,448	220,648
March	23,405	20,406	18,001	2,405	2,999	230,066
April	16,464	14,467	12,436	2,031	1,997	235,408

[a] All figures are for U.S. personnel only.

Source: Annual Rpt, Surg, Fifth Army, 1944.

beachhead, which are not separately available by months. It will be noted that the disease rate was highest in December, when weather conditions were at their worst, while battle casualties reached their peak in February, when both fronts were fully engaged.[27]

Evacuation From Fifth Army

Patients who could not be returned to duty within a reasonable time—usually twenty-one days, although there was no general policy—were moved as rapidly as they became transportable to fixed hospitals in North Africa and in the developing communications zone around Naples. During the period of army control, all evacuation out of the combat zone was to Africa, by sea from the Salerno beachhead, and by air from Naples. Responsibility for evacuation out of Italy shifted to the newly activated Peninsular Base Section on 1 November, with Fifth Army thereafter responsible only for clearing its own hospitals.[28]

Evacuation in the army area, like hospitalization, was centrally controlled by the Fifth Army surgeon. Evacuation hospitals reported daily as to the number of patients ready for disposition, and each was given a quota twenty-four hours in advance of movement. Wherever possible, by arrangement with the base surgeon, specific hospitals were designated to receive the evacuees. Though this system was new in the theater, it worked smoothly in most instances. Among the practical difficulties encountered were occasional communication failures, and a tendency on the part of evacuation hospital commanders to move patients who should have been retained in order to use up the allotted quota of fixed beds.[29]

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[27] See pp. 273–74, below.

[28] See p. 326, below.

[29] (1) Annual Rpt, Surg, Fifth Army, 1944. (2) Annual Rpt, 10th Field Hosp, 1943. (3) Annual Rpt, 15th Evac Hosp, 1943.

Collecting companies of the army medical battalions were attached to the evacuation hospitals to handle the actual transportation. Until late November 1943, when adequate transportation became available to the base section, patients from front-line hospitals were taken by army ambulance directly to the point of treatment or of embarkation to Africa. Beginning on 22 November, most were carried only to the railhead, where they were transferred to the 41st Hospital Train and army responsibility ended. Until near the end of the year the train ran only between Naples and Caserta, a distance of about twenty-five miles. Beginning on 26 December the loading point was extended ten miles to Sparanise, in the immediate vicinity of the main concentration of evacuation hospitals behind the Winter Line.

U. S. Army ambulances also evacuated the field hospital of the 1st Italian Motorized Group to the Italian military hospital at Maddaloni. Evacuation hospitals of the French Expeditionary Corps were generally cleared by French ambulances to the Sparanise railhead, where FEC patients were allotted space on the hospital train.

Medical Supplies and Equipment

When planning for the Salerno landings got under way, the Sicily Campaign was at its midpoint and the defects of the Seventh Army supply system were already clear. Chief among these defects were the late arrival of medical depot personnel and the failure to submit supply requisitions to Services of Supply headquarters for editing. There were consequent delays in the establishment of issue points, with some unnecessary loss of material, and excessive quantities of a number of supply items were delivered to the island.[30]

With this Sicilian experience in mind, an effective liaison was established between the SOS Medical Section and the office of the Fifth Army surgeon. All supply requisitions were cleared through SOS but changes were made only by mutual agreement. To deal with the beach supply problem a detachment consisting of one officer and twelve enlisted men of the 4th Medical Supply Depot was scheduled for the D-day convoy.

All medical units going ashore in Italy carried their full Table of Basic Allowances supply load, augmented by special items such as plasma, atabrine, and extra splints and dressings. In addition, considerable quantities of medical supplies were carried ashore by the combat troops. These were packed in the sealed, waterproof containers designed for the purpose at the Fifth Army Invasion Training Center, and were dropped on the beach as the men carrying them went ashore.

The assault personnel of the 4th Medical Supply Depot made their way under fire to a previously designated site on the beach, where they dug in. The men then collected the scattered supply containers and medical equipment as it was unloaded, and set up a dump. Within five hours of its landing, the 4th Medical Supply Depot was issuing supplies to meet emergency needs. One hundred tons of medical supplies were unloaded during the night of 9–10 September, together with some 200 tons of organizational equipment belonging to the 16th and 95th Evacuation Hospitals. Personnel of the two hospitals collected and sorted their own equipment, which was stored by the supply group until hospital sites became available.

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[30] (1) Rpt of Med Supply Activities, NATOUSA, Nov 42–Nov 43. Other sources primarily relied upon in this section are: (2) Annual Rpt, Surg, Fifth Army, 1943; (3) Annual Rpt, Surg, Fifth Army, 1944; (4) Annual Rpt, Med Sec, NATOUSA, 1943; (5) Annual Rpt, Med Sec, MTOUSA, 1944; (6) Unit rpts of the 4th and 12th Med Depot Cos, 1943 and 1944; (7) Davidson, Med Supply in MTOUSA, pp. 50–60.

The supply dump operated on the beach for four days. Then on 13 September the original detachment was relieved by a new and larger segment of its organization, consisting of two officers and fifty-two enlisted men, who brought with them four 2½-ton trucks, a ¼-ton truck, and a weapons carrier. The enlarged detachment moved the dump to Paestum, near the newly laid out hospital area. The depot was gradually enlarged until it occupied thirteen wall tents.

During the first days at the beachhead there were some shortages of expendable items, due primarily to losses by enemy action, damage in handling, and accidental immersion. Replacements were ordered by cable from North Africa and were promptly received. By 21 September, when the advance out of the beachhead began, a 14-day level of medical supplies was available.

A supply depot was established at Avellino early in October, where the medical supply responsibility for Fifth Army was transferred from the 4th to the 12th Medical Supply Depot, along with fifty tons of supplies. The detachments of the 4th that had served the beachhead then joined the remainder of their unit in Naples, where a base section organization was being set up.[31]

Thereafter, the 12th Medical Supply Depot—12th Medical Depot Company after 3 December 1943—followed the Fifth Army advance as closely as terrain and circumstances permitted. The Avellino dump was closed on 25 October, being supplanted by a depot at Caserta. A forward issue point was established at Riardo on 6 November, coincident with the launching of the attack on the Winter Line. On 17 December a larger depot was opened in a monastery at Calvi Risorta. Like the Riardo depot in the Fifth Army hospital area, the new dump was operated by the base section platoon. One hundred and twenty tons of medical supplies were moved forward to Calvi Risorta, using eighty trucks. By this date items of medical supply were generally plentiful.

The 1st Advance Platoon of the 12th Medical Depot Company was assigned on 8 January 1944 to VI Corps for the Anzio operation. On the 26th of that month, in support of the first unsuccessful assault on Cassino, the 2d Advance Platoon moved from Riardo to the village of San Pietro, just off Highway 6 about midway between Mignano and Cassino. Since most of the buildings in the area were destroyed, the supply dump functioned under canvas.

Professional Services in the Army Area

Medicine and Surgery

Forward Surgery—Fifth Army followed and further refined in Italy the techniques worked out during the late stages of the Tunisia Campaign for bringing the best in surgery as close as possible to the combat soldier. Detailed instructions as to the preferred management of various types of wounds were issued shortly before the invasion,[32] but initial reliance was placed on the experienced teams of the 2d Auxiliary Surgical Group. In the landing phase, these teams were attached to the clearing stations, shifting to the evacuation hospitals as they were established. When the front was stabilized north of the Volturno late in October 1943, field hospital platoons, each with two to eight surgical teams, were set up adjacent to the division clearing stations, on the pattern developed in Sicily. Although these 100-bed units were somewhat larger than experience had shown to be necessary, no suitable substitute was available.[33]

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[31] See p. 326, below.

With the commitment of the field hospitals, a system of triage was instituted at the clearing stations. Patients who could stand the ambulance trip were sent back to an evacuation hospital. Those who could not safely be moved were carried by litter to the field hospital for immediate surgery. The nontransportable category generally included cases of severe shock, intra-abdominal wounds, thoracoabdominal wounds, sucking chest wounds, and traumatic amputations. Patients treated in the field hospital units were retained until they could be safely moved, up to a maximum of fourteen days. As in Sicily, personnel and equipment sufficient for postoperative care of remaining patients were left behind when the hospital moved.[34]

Important changes in management of surgical cases during the southern phase of the Italian campaign included the wider use of penicillin, which had been allocated for specific treatments in the closing months of 1943, but became relatively plentiful early in 1944; radical debridement and other prophylactic measures to prevent gas gangrene; and the extensive use of whole blood, made possible by the establishment of a blood bank in Naples in February 1944.[35]

Another significant administrative development in forward surgery was the employment of a surgical consultant by Fifth Army toward the end of 1943. The assignment went to Maj. Snyder, who had served in a similar capacity with II Corps in the Tunisia and Sicily Campaigns. The theater consultant in surgery, Colonel Churchill, continued to devote much of his time to the inspection and improvement of surgery in the army area. Fifth Army also benefited, as II Corps and Seventh Army had not, from the close proximity of fixed hospitals in the base section, permitting frequent conferences for exchange of experience and ideas among medical officers.

Neuropsychiatry—Experience in Sicily tended to confirm the conclusions reached by Major Hanson and his asso-

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[32] Fifth Army Med Cir 1, an. 2, sub: Surg Procedures, 21 Aug 43.

[33] After the Sicily Campaign, General Blesse and Colonel Churchill concluded that the ideal unit for forward surgery would be a 120-bed surgical hospital, capable of operating in two 60-bed sections. See (1) Col Wickert, Rpt of Visit to ETO and NATOUSA, 1 Sep to 24 Oct 43. Except as otherwise noted, sources for this section are: (2) Annual Rpts, Surg, Fifth Army, 1943, 1944; (3) Annual Rpt, Med Sec, NATOUSA, 1943; (4) Annual Rpt, Med Sec, MTOUSA, 1944; (5) Annual Rpt, 11th Fld Hosp, 1944; (6) Annual Rpts, 33d Field Hosp, 1943, 1944; (7) Annual Rpts, 2d Aux Surg Gp, 1943, 1944.

[34] For a nonprofessional, but vivid and moving account of life in one of those field hospital units, see Margaret Bourke-White, *They Called It The Purple Heart Valley* (New York: Simon and Schuster, 1944), pp. 123–32.

[35] (1) Surg, NATOUSA, Journal, 3 Nov 43. (2) Fifth Army Med Cir No. 4, 20 Oct 43, sub: Gas Gangrene. For discussion of the organization and operation of the blood bank, see pp. 352–53, below.

TEAM OF 2D AUXILIARY SURGICAL GROUP OPERATING *on a wounded German soldier, 94th Evacuation Hospital, December 1943.*

ciates during the Tunisia Campaign that the majority of psychiatric cases arising as a result of combat could be returned to duty in a relatively short time if treated close to the source of disturbance. It was largely on the basis of Hanson's findings that the War Department in October 1943 authorized the addition of a psychiatrist to the staff of each division surgeon, a practice followed in World War I but later abandoned. A group of psychiatrists was recruited for the purpose, and Hanson himself, at the request of the Surgeon General, returned to the zone of interior to assist in their indoctrination.[36]

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[36] (1) Hanson, comp. and ed., "Combat Psychiatry," Bulletin *U.S. Army Medical Department,* Suppl (November 1949) pp. 33, 45. (2) Pers Ltr, Gen Blesse to TSG, 13 Dec 43. General Blesse was understandably reluctant to let Hanson go, but felt that the mission was of such importance as to justify recalling his neuropsychiatric consultant from Italy to undertake it. "I hope," he wrote to General Kirk in the letter cited above, "you will not find it necessary to keep him there very long for I need him, and if you have no objection I would like to have him return here just as soon as possible." Principal sources for this section include: (3) Hanson, comp. and ed., "Combat Psychiatry," Bulletin, *U.S. Army Medical Depart-*

From the outset of the Italian campaign, battalion and regimental aid stations were directed to retain cases of mild neurosis such as anxiety states and exhaustion. These were to be fed, offered opportunity to bathe, and given a sedative sufficient to ensure sleep. Cases requiring more than thirty-six hours treatment were sent to the division clearing stations, where heavier sedation was given. Those who still did not respond after seventy-two hours were sent on to the evacuation hospitals, where they were given more specialized treatment and returned to duty or evacuated to the communications zone, according to their hospital expectancy. Of the 2,749 cases disposed of between 9 September and 31 December 1943, 6 percent were returned to duty from divisional installations, and 20 percent from Fifth Army hospitals, the remainder being evacuated out of the army area.

Several factors combined to produce this relatively small percentage of returns to duty. The urgent need for beds in the evacuation hospitals during months of almost continuous combat sent to base hospitals many psychiatric casualties that might have been reclaimed in the combat zone. Evacuation hospital staffs had little time to devote to such cases, and treatment varied with each installation. Even where adequate treatment was available, the very atmosphere of an evacuation hospital tended to convince the patient that his illness was organic and to fix rather than to allay his anxieties.

The solution adopted by Colonel Martin was the creation of a specialized neuropsychiatric hospital to operate as close as possible to the actual battle lines. Known as the Fifth Army Neuropsychiatric Center, the hospital was formed from the 2d Platoon of the 601st Clearing Company, 161st Medical Battalion, with beds for 250 patients. Four psychiatrists were added to the staff, others being attached at intervals when the case load required it. The enlisted personnel was approximately double that of a normal clearing platoon, the wardmen being specially trained for the job. The center opened on 21 December 1943 in the Teano-Riardo area, where the bulk of Fifth Army medical installations were then concentrated. It continued to function at various locations throughout the war, never out of earshot of artillery fire.

Every effort was made to avoid a hospital atmosphere. There were no nurses. Pajamas, sheets, and pillows were not issued. Patients slept on regulation cots, made their own beds, policed the area. So far as possible, routine military discipline was maintained, and the idea of a prompt return to duty was always kept before the men.

After 21 December 1943, all psychiatric cases that could not be handled at the division level were sent directly to the Neuropsychiatric Center. There they were kept under sedation for two days, but were still expected to go to meals, wash, and shave every day. After the effects of sedation had worn off, the men were interviewed—usually on the third or fourth day of their stay. The interview was designed to elicit a full story of what had happened to the men in combat, with probing into their premilitary histories confined to the bare essentials. Each individual case was evaluated in

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ment, Suppl (November 1949); (4) Annual Rpts, Surg, Fifth Army, 1943, 1944; (5) Annual Rpt, Med Sec, NATOUSA, 1943; (6) Annual Rpt, Med Sec, MTOUSA, 1944; (7) Surgs' rpts for 1943 and 1944 of the divs and corps mentioned in the combat secs of this chapter.

TABLE 6—DISPOSITION OF NEUROPSYCHIATRIC CASES IN FIFTH ARMY
SEPTEMBER 1943—APRIL 1944

Month and Year	Returned to Duty				Evacuated From Army Area		Total Dispositions
	From Divisions		From Hospitals				
	No.	Percent	No.	Percent	No.	Percent	
1943							
September	63	16.2	78	20.1	247	63.7	388
October	93	15.8	136	23.2	358	61.0	587
November	19	1.8	173	16.0	886	82.2	1,078
December	17	1.5	260	23.3	838	75.2	1,115
1944							
January	....	....	276	25.9	790	74.1	1,066
February	....	....	402	21.0	1,508	79.0	1,910
March	58	5.2	215	19.4	837	75.4	1,110
April	100	14.2	148	21.0	457	64.8	705

Source: Annual Rpt, Surg, Fifth Army, 1945.

this interview and the decision made as to eventual disposition. A man might be returned to duty promptly, retained for further treatment, or evacuated to the rear, according to the severity of his symptoms and the nature of his responses under questioning.

By March 1944 each U.S. division of Fifth Army had its own psychiatrist, who screened the cases as they came to the clearing stations. The system was functioning smoothly as a single process by the time the drive to Rome was launched in May, but was still to be significantly improved at the division level later in the year.[37]

The disposition of neuropsychiatric cases in Fifth Army for the period from September 1943 through April 1944 is shown in Table 6. The sharp decline in returns to duty from division clearing stations in November 1943 reflects the impact of continuous and increasingly severe fighting under steadily deteriorating conditions of weather and terrain. The ameliorating effect of the Fifth Army Neuropsychiatric Center first appeared in January 1944. February was the month of heaviest fighting at both Anzio and Cassino. The improved figures for April represent virtual freedom from combat, improved weather conditions, and the first results of the assignment of psychiatrists at the division level.

Diseases of Special Interest: Infectious Hepatitis—The period between the Salerno landings and the launching of the May 1944 offensive toward Rome showed no unusual incidence of disease among Fifth Army troops. In the early weeks of the drive, malaria, sandfly fever, and dysentery predominated.[38] Respiratory diseases appeared with the advent of the rainy season, but not in unusual volume. The only disease worthy of special notice as a problem for the medical service during the period, other than those discussed under separate headings in this chapter, was infectious hepatitis. The disease was first noted in July 1943 in North Africa, but was confined mainly to units of the 34th Division. In Italy it became general shortly after the Salerno landings, and reached a peak rate of 121.0 cases per 1,000 per annum for the second week in October. The rate for the entire month of October was 93, dropping sharply and steadily thereafter to 11 in April 1944. Hepatitis consumed manpower out of all proportion to its incidence, since the average time lost was sixty days for each patient.[39]

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[37] See pp. 314–16, below.

Infectious hepatitis was intensively studied by Fifth Army medical officers during and after the outbreak, but without arriving at definite conclusions as to its mode of transmission, or the factors influencing its virulence. The disease was seasonal in character, being most widespread in the fall months. It appeared to be more common among seasoned troops than among men newly arrived in the theater. There was some evidence of a relationship between hepatitis and a previous history of diarrhea. The studies made in the winter of 1943–44, however, did not produce enough information to prevent another and still more virulent outbreak in the late fall of 1944.[40]

Preventive Medicine

Venereal Disease—The control of venereal disease in Italy proved to be even more difficult than it had been in Africa. After more than twenty years of fascism and three years of war, the Italian economy was a patchwork of makeshifts in which sheer hunger often overrode moral considerations. Food was to be had on the black market for a price, and the price could be obtained by prostitution. To women whose men were dead or broken, prisoners of war, or doing forced labor for a conqueror, there seemed no other way. In cities such as Naples the opportunities for clandestine contacts were so numerous that neither inspection of licensed brothels nor putting the houses off-limits offered any solution. The psychology of the soldier, moreover, was that the longer he remained in combat, the more remote were his chances of getting home. As time went on, his memories dimmed and he came increasingly to live for the moment.[41]

Italian doctors stated, and laboratory tests tended to confirm the estimates, that by 1944 half the available women in Italy had some form of venereal disease, and that in the populous areas 95 to 100 percent of all prostitutes showed clinical evidence of one or more venereal diseases. Add to this high rate of infection the aggressiveness of the women, and the nature of the problem becomes clear. For example, when the 3d Infantry Division was training near Naples early in January 1944 for the Anzio operation, the division surgeon reported that "prostitutes from Naples descended upon our encampment by the hundreds, outflanking guards and barbed wire. They set up 'business' in almost inaccessible caves in the surrounding bluffs. Many of them gained entrance into camp by posing as laundresses. . . . Each day several large truck loads of screaming, screeching prostitutes were collected in the Division area and delivered into the custody of the Italian police.[42]

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[38] Surg, NATOUSA, Journal, 11 Oct 43.

[39] (1) Annual Rpts, Surg, Fifth Army, 1943, 1944. (2) Annual Rpts, Surgs, 3d, 34th, 36th, 45th, 1st Armd Divs, 1943, 1944. (3) Annual Rpts, Surgs, II and VI Corps, 1943, 1944.

[40] See detailed discussion in Annual Rpt, Surg, Fifth Army, 1944, and p. 451, below.

[41] This section is based primarily on the annual reports of the Fifth Army surgeon for 1943 and 1944 and on the reports of corps and division surgeons in the Fifth Army area.

Fifth Army dispensed with its venereal disease control officer in September 1943 when the Army went into combat. In that month the venereal disease rate was low, but it began to rise sharply with the capture of Naples in October. In December the position of control officer was reestablished, and Maj. (later Lt. Col.) Sydney Selesnick was assigned to it.

It was not practicable to attempt any direct control of houses of prostitution. Italian laws governing the traffic were respected, and their enforcement was abetted by Allied Military Government officials in all occupied territory. The most that could be done in the army area was to maintain a continuous educational drive, to see that preventive devices were issued and that prophylactic stations were readily available, and to bring in known prostitutes for examination, and treatment if they were infectious. Line officers were held responsible if their units showed any disproportionate incidence of venereal disease. (*Table 7*)

Along with these preventive measures, every effort was made to reduce the time lost from duty on account of venereal disease. An important step in this direction was the establishment on 31 December 1943 of the Fifth Army Venereal Disease Diagnostic and Treatment Center to function in the army area. The 2d Platoon of the 602d Medical Clearing Company, 162d Medical Battalion, formed the nucleus of the new organization, which was augmented by personnel drawn from the collecting companies of the battalion. When fully staffed, the VD center had 4 Medical Corps officers, a Medical Administrative Corps officer, and 92 enlisted men. It had 250 beds. A mobile unit of the 2d Medical Laboratory was attached, adding an officer and 5 enlisted men.

Throughout the Gustav Line and Rome-Arno Campaigns 90 percent of all Fifth Army venereal cases—except those on the Anzio beachhead—were treated in the center, which could move to a new location in six hours, carrying its patients with it. Uniformity and continuity of treatment cut down materially the time lost from duty per case. The recovery time was further reduced after penicillin became generally available for venereal cases in mid-February 1944.[43]

Disposition of patients by the Fifth Army Venereal Disease Diagnostic and Treatment Center in the first four months of 1944 is shown in Table 8. Although the center did not formally open until the end of December, a considerable number of cases were already in the hospital on 1 January, accounting for the

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[42] Annual Rpt, Surg, 3d Div, 1944.

[43] Penicillin had been used in the theater in the treatment of gonorrhea as early as November 1943, but only on special allocation, arranged by the theater venereal disease control officer. Surg, NATOUSA, Journal, 16 Nov 43.

TABLE 7—VENEREAL DISEASE RATE PER THOUSAND PER ANNUM, BY DIVISIONS, SEPTEMBER 1943—APRIL 1944

Month	1st Armored	34th Infantry	82d Airborne	3d Infantry	45th Infantry	36th Infantry	88th Infantry	85th Infantry
1943								
September	87	28	12	29	23	....	....	....
October	41	6	79	21	13	40	....	....
November	137	15	130	35	19	118	....	....
December	192	90	....	119	87	20	....	....
1944								
January	106	173	....	89	87	36	....	....
February	73	103	....	60	53	54	8	....
March	82	125	....	19	39	106	20	6
April	85	82	....	10	10	95	24	22

Source: Annual Rpt, Surg, Fifth Army, 1944.

large number of dispositions in that month.

Malaria Control—The Fifth Army malaria control program was part of a theater-wide effort. The necessary organization was set up well in advance of the malaria season, primary responsibility being vested in the Fifth Army medical inspector, Colonel Gilmore. Colonel Gilmore's assistant, Maj. (later Lt. Col.) Raiford A. Roberts, was named operational director of the control program, and Capt. Joseph J. Bowen served as malariologist from February 1944, on detail from the 2655th Malaria Control Detachment. The operating groups were the 11th Malaria Survey Unit and the

TABLE 8—DISPOSITION OF PATIENTS, FIFTH ARMY VENEREAL DISEASE DIAGNOSTIC AND TREATMENT CENTER, JANUARY—APRIL 1944

	January	February	March	April
Admissions	1,072	914	938	689
Dispositions	1,608	871	975	597
Returned to duty	696	618	921	584
To convalescent hospital	....	80	44	1
To base hospitals	912	173	10	12

Source: Annual Rpt, Surg, Fifth Army, 1945.

28th and 42d Malaria Control Units, with the effective co-operation of the Fifth Army engineers.[44]

Malaria control measures were carried out at all echelons, each echelon being responsible for its own area. Each corps, division, regiment, battalion, and company had its own nonmedical malaria control officer. Each formation down to and including the battalion had its own malaria control committee. At corps and division levels, these committees consisted of the medical inspector, the engineer, and the malaria control officer. For regiments and battalions the committees were composed of the surgeon and the malaria control officer. Each company, battery, and similar unit had an antimalaria detail of at least two enlisted men, including a noncommissioned officer. In the higher echelons the antimalaria function was largely planning and supervisory. At the company level the antimalaria details were responsible for carrying out control measures in the unit area and for a radius of one mile around it. Italian doctors and sanitary engineers familiar with the local conditions were fitted into the control organization, and through the Allied Military Government (AMG) the civilian population was also included.

The engineers conducted most of the large-scale control activities, such as draining flooded areas, clearing obstructions from waterways, and filling in craters, as well as applying larvicides to water surfaces. Italian troops and civilian laborers were freely employed in this work.

In order to give intelligent direction to the whole malaria control program, two special schools were organized by Captain Bowen. One of these, on the Anzio beachhead, will be discussed in the following chapter. The other served personnel of II Corps in the highly malarious coastal region south of the Garigliano River. The school was conducted under the auspices of the 54th Medical Battalion between 1 and 27 March 1944, during which period 101 officers and 976 enlisted men, including 466 noncommissioned officers, were trained in the techniques of malaria control. Posters were prominently displayed throughout the corps area, and a training film on the cause and control of the disease was shown continuously during the malaria season.

The control problem was rendered much more difficult by the thoroughness with which the Germans had destroyed pumping plants, dikes, culverts, and drainage systems, flooding large sections of reclaimed land. It was nevertheless a successful program in terms of its ultimate results. The malaria case rate per 1,000 per annum among Fifth Army troops rose sharply from 83 in September 1943 to 193 for the following month, dropped to a low of 45 in December, and was only 85 for April 1944. Even in the most malarious months of June, July, and August, the case rates were only 94, 82, and 70 respectively. These rates compare favorably with those for the theater

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[44] Main sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1944; (2) Annual Rpt, Surg, II Corps, 1944; (3) Annual Rpt, Med Sec, MTOUSA, 1944; (4) Ltr, Capt Bowen, Asst Malariologist, 2655th Malaria Control Detach (Overhead), to Surg, NATOUSA, 29 Dec 44, sub: Stat Analysis of Malaria in MTOUSA, 1944; (5) Ltr, Col Andrews, Acting Malariologist, American Sec, AFHQ, to Surg, NATOUSA, 10 May 44, sub: Antimalaria Inspection Tour of VI Corps, Fifth Army, II Corps and Adriatic Areas of U.S. Military Occupation 23 March–3 May 44; (6) Andrews, "North Africa, Italy, and the Islands of the Mediterranean," *Communicable Diseases, Malaria.*

Treating Moroccan Mountain Troops *of the French Expeditionary Corps for frozen feet at an aid station in the Venafro area.*

as a whole, which were 95 for October 1943, 31 for December 1943, and 80 for April 1944. The rates for the theater as a whole in the summer months of 1944 were 70 for June, 81 for July, and 92 for August.[45]

When II Corps moved out of the Minturno sector in the May offensive, responsibility for continuing malaria control work passed to the Peninsular Base Section.

Trench Foot—Trench foot appeared among Fifth Army troops early in the Winter Line campaign and continued to plague commanders until the spring of 1944. The condition was first reported in mid-November 1943. Within a week more than 200 cases had been hospitalized. The total for the month was 305, with 1,323 cases reported in December. The January and February figures were still higher, with a sharp decline in March. For the first three months of 1944, upwards of 4,000 trench foot cases were treated, divided fairly evenly between the Cassino front and the Anzio beachhead.[46]

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[45] (1) Annual Rpt, Surg, Fifth Army, 1944. (2) Final Rpt, Preventive Medicine Officer, MTOUSA, 1945.

Fifth Army troops were not equipped for the physical conditions that confronted them in the winter of 1943–44. There had been no adequate indoctrination as to the danger of trench foot, and no preparations to prevent it. Troops had only the standard army shoe or combat boot, with light wool socks, which did not give protection against either cold or dampness. Heavy wool socks became available later in the winter, but could not be worn until it was possible to issue larger shoe sizes. Neither were there enough socks on hand to permit the daily change recommended by the surgeon.

In the bitter mountain fighting before Cassino, where cold and rain or snow were almost incessant, front-line troops could not hope to keep their feet dry, and, continuously in range as they were of enemy small arms fire, they could not risk giving away their positions by movement merely to exercise their limbs. Manpower was too short to permit rotation, so many men went for a week or more without opportunity to dry or warm their feet and little chance even to walk on them. Trench foot was an almost inevitable consequence.

While the condition was intensively studied by medical officers of Fifth Army and proper prophylactic measures were determined, little headway could be made until more suitable footgear became available.[47]

Typhus—An epidemic of typhus that broke out in Naples in October 1943 posed a serious threat to Fifth Army. The account of measures taken to combat the epidemic and to prevent its spread to Fifth Army troops properly belongs in another chapter.[48] It will be sufficient here to say that vigorous action to prevent louse infestation was taken, and was effective. For several months Naples was off-limits to Fifth Army troops except on necessary business, and all military personnel entering or leaving the city were treated with insecticides.

Dental Service

Facilities for dental prosthetic work remained scarce during the summer of 1943 when Fifth Army was staging for the invasion of Italy, but with that exception the troops were dentally in good condition when the campaign began. In the assault phase, only emergency dental work was done, while most of the dental officers and enlisted personnel performed other duties. By 1 October, however, the Fifth Army dental service was solidly established. Three divisional dental laboratories were in operation and others were functioning in connection with the evacuation hospitals. By 1 December there were twenty laboratories in the army area, including two mobile units built on 2½-ton truck bodies by the 34th and the 1st Armored Divisions.[49]

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[46] Figures reported differ considerably. For the months of November 1943 through March 1944, Annual Report, Medical Section, MTOUSA, gives 5,058, but concedes that the 1943 figures are too low. Annual Report, Surgeon, Fifth Army, 1944, gives 5,710 cases for the same period, while the total is reduced to 5,274 in Annual Report, Surgeon, Fifth Army, 1945. The text follows Annual Report, Surgeon, Fifth Army, 1944, and Fifth Army Medical Circular No. 6, 24 November 1943. For discussion of trench foot at Anzio, see pages 285–86, below. For more technical treatment, see Col. Tom F. Whayne, USA (Ret.) and Michael E. DeBakey, M.D. *Cold Injury, Ground Type* "Medical Department, United States Army, in World War II" (Washington, 1958), pp. 101–25. Whayne and DeBakey also accept the figures reported by the Fifth Army Surgeon for 1944.

[47] Compare the 1943–44 record with that of the winter of 1944–45 in the north Apennines, page 452, below.

[48] See pp. 462–65, below.

In mid-December 1943 the II Corps surgeon, Colonel Ginn and the corps dental surgeon, Lt. Col. Gerald A. McCracken, organized a II Corps Prosthetic Dental Clinic and Laboratory. The clinic was housed in a hospital ward tent supplied by the 54th Medical Battalion, which also furnished lighting fixtures, a generator, and the necessary laboratory tables, benches, and operating platforms. One dental officer was detached from the 54th Medical Battalion, and one from the 11th Field Hospital. The same two organizations also furnished between them one laboratory technician, two chair assistants, and one clerk. The remainder of the personnel consisted of two prosthetic dental teams of one officer and four technicians each, from the 2d Auxiliary Surgical Group. One of these teams was withdrawn late in February 1944.

Early in January a similar clinic was organized at the army level by the Fifth Army dental surgeon, Colonel Cowan. The Fifth Army Dental Clinic was housed with the 2d Platoon of the 602d Medical Clearing Company, 162d Medical Battalion, which was also the nucleus of the venereal disease center. Like the II Corps clinic, its personnel and equipment were drawn from other medical units. The Army clinic had four dental officers, with an appropriate complement of enlisted men.

Both II Corps and Fifth Army dental clinics were originally designed primarily for prosthetic work, but both quickly enlarged their facilities to handle all aspects of dentistry except X-ray work.

Another clinic, similarly equipped and staffed, was set up as an organic part of the Fifth Army rest center in Naples, moving with the center to Caserta when the typhus epidemic put the former city off-limits.

As in earlier campaigns, the more extensive dental facilities of the divisions were usually located in the service area, with routine dental work being done during slack periods in the clearing stations. During actual combat only emergency work was performed.

While dental officers in Fifth Army increased from 154 in September 1943 to 233 in April 1944, their numbers did not keep pace with the rise in troop strength. The ratio of dental officers to mean troop strength in September was 1:740. In April it was 1:1010. Through better organization and more efficient distribution, however, the amount of dental work done showed a steady increase over the 8-month period. (*Table 9*)

Veterinary Service

In the hard mountain fighting before Cassino, pack animals were extensively used, bringing the Veterinary Corps into action in something more than its food inspection capacity. Early in the Winter Line campaign, veterinary officers of the 34th and 45th Divisions procured such animals as they could and organized divisional pack trains. Other than the division veterinarian and his sergeant, no

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[49] Chief sources for this section are: (1) Annual Rpts, Surg Fifth Army, 1943, 1944; (2) Annual Rpt, Surg, II Corps, 1944; (3) Annual Rpt, Med Sec, MTOUSA, 1944; (4) 1943 and 1944 rpts of the combat and med units in Fifth Army, Sep 43–Apr 44.

TABLE 9—DENTAL SERVICE IN FIFTH ARMY, SEPTEMBER 1943–APRIL 1944 [a]

	September 1943	October 1943	November 1943	December 1943	January 1944	February 1944	March 1944	April 1944
Admissions	11,693	13,505	15,118	17,404	16,911	17,680	21,824	23,552
Sittings	15,741	19,353	22,590	25,640	23,350	27,440	34,361	39,820
Restorations	13,477	15,586	19,078	24,824	24,244	24,379	30,508	33,617
New dentures	104	165	338	432	474	769	1,033	1,099
Dentures repaired	165	151	291	324	250	296	439	447
Teeth extracted	3,443	3,484	4,927	5,296	4,751	5,048	6,156	6,500
Teeth replaced	819	1,377	2,683	3,305	3,493	5,810	8,030	8,342
Total operations	33,235	39,305	52,154	61,310	59,552	61,433	76,404	83,571
Restorations per officer	86	75	100	129	114	112	138	154
Operations per officer	212	188	275	318	282	282	345	385
Days of duty	4,692	6,488	5,688	5,970	6,600	6,319	6,870	6,513

[a] Includes Anzio beachhead.

Source: Annual Rpts, Surg, Fifth Army, 1943, 1944.

trained personnel were available. Food for the animals was scarce and of poor quality, and the animals themselves were old, chronically lame, undersized, and generally in poor condition. Despite these handicaps, however, it was soon apparent that pack trains would be a virtual necessity if troops were to be supplied in the mountains.[50]

With the recognition of this necessity, Col. Clifford E. Pickering, Fifth Army veterinarian, was directed to help in the procurement, care, and rehabilitation of animals. The task was no easy one. First the Italian Army, and later the Germans, had systematically looted the farms; and the Germans had killed such animals as they could not use themselves, in order to make still more difficult the economic and military problem of the Allies.

Colonel Pickering learned from Italian sources that a considerable number of animals bred for military use had been distributed among farmers for concealment from the Germans. With the assistance of former Italian cavalry officers and local carabinieri, these were located and assembled. Enough feed for their immediate needs was found in a partially destroyed factory at Maddaloni. Nails and horseshoes were made from scrap iron in improvised blacksmith shops. An Italian breeding depot was re-established as the Fifth Army Remount Depot, which was turned over to the base section at the end of the year.

Another substantial group of animals was located in Sardinia, where the prompt revolt of the Italian garrison had saved 5,000 mules, 1,500 horses, 3,000 saddles, and quantities of shoes from the vengeful Germans. Pack trains were organized on the island with Italian personnel, each train having 4 line officers, a medical officer, a veterinary officer, 400 enlisted men, and approximately 325 animals. Two of these trains reached the mainland of Italy before the end of 1943. On their arrival, a Fifth Army Provisional Veterinary Hospital was organized, using 4 officers and 53 enlisted men drawn from the pack train complements. The hospital opened at Visciarro on 8 December. December also saw the arrival of a French veterinary hospital, with 5 officers and 74 enlisted men from North Africa with elements of the French Expeditionary Corps. The French also brought their own animals in substantial numbers.

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[50] This section is drawn primarily from the annual reports of the Fifth Army surgeon for 1943 and 1944, and the reports of the division surgeons whose units participated in the Winter Line and Cassino campaigns. See also, Miller, *United States Army Veterinary Service in World War II.*

More pack trains arrived from Sardinia in January 1944, together with two more Italian-staffed veterinary hospitals, the 110th and the 130th. Each of these had four veterinary officers, one administrative officer, and 100 enlisted men. These units were set up in the forward area, while the provisional hospital, renamed the 210th Veterinary Hospital (Italian), was turned over to the Peninsular Base Section.

In February an Italian cavalry officer, Col. Berni Canani, was named liaison officer between Colonel Pickering's office and all Italian units, a position in which his services proved invaluable.

A U.S. veterinary evacuation hospital and some separate veterinary companies were requested for Fifth Army by General Blesse in November 1943, in anticipation of a wider use of animals in the mountain fighting approaching the Gustav Line. It was March 1944, however, before the only American veterinary evacuation hospital to serve in the Mediterranean, the 17th, reached Italy, and no veterinary company was available to Fifth Army before the final days of the war.[51] The 17th Veterinary Evacuation Hospital was set up near Teano.

The outstanding veterinary problems of the Winter Line and Gustav Line campaigns were the care and rehabilitation of poor quality, poorly conditioned animals whose very physical debility increased their proneness to battle wounds, and the provision of feed adequate both in quantity and quality. Equipment for ridding the animals of lice was very deficient during this period. While feed increased in quantity, there was little improvement in quality until crops were harvested in the rehabilitated areas of Italy and shipping became available.

Animal strength in Fifth Army rose from 986 horses and 4,136 mules in January 1944 to 2,226 horses and 10,433 mules, or 12,659 animals in all, in April. Of this peak total, 2,023 horses and 7,266 mules were with the French Expeditionary Corps, which had its own treatment facilities. During the 4-month period, January—April 1944, 608 U.S. and Italian animals were admitted to the hospital of which 368 were returned to duty, 197 were evacuated to base, and 47 died or were destroyed.

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[51] (1) Surg, NATOUSA, Journal, 15 Nov 43. (2) Annual Rpt, 17th Vet Evac Hosp, 1944. The 45th Veterinary Company (Separate) arrived in the Mediterranean in the summer of 1944, but was immediately assigned to Seventh Army, then training for the invasion of southern France.

CHAPTER VII

Anzio Beachhead

A seaborne landing on the west coast of Italy between the Garigliano and Tiber rivers had been contemplated since early November 1943, and plans involving various sites, including Anzio, were developed in some detail. The stubborn German defense of the Winter Line, however, made it clear that the main body of Fifth Army would not be able to break through to support the beachhead at any predictable time, and plans were held in abeyance.

They were revived at a Christmas day conference in Tunis, where Prime Minister Churchill was the moving force. All of the military commanders concerned were present except the one most directly involved—General Clark, who would be immediately responsible for the operation. Those at the conference included General Eisenhower, soon to leave for OVERLORD; General Sir Henry Maitland Wilson, who was to succeed Eisenhower as Supreme Allied Commander in the Mediterranean; General Alexander, commanding the 15th Army Group in Italy; Air Chief Marshal Arthur W. Tedder, who headed the Allied Air Forces in the Mediterranean; and Admiral Sir John Cunningham, commanding the Allied Navies in Italian waters. All of these men appreciated the risks inherent in such an operation, with the limited forces at their disposal, but political considerations overrode the military hazard. The Prime Minister felt that Rome must be quickly taken or the Italian campaign would be counted a failure, and the Allied cause would suffer, especially with the Turks, whose active military aid he was then strenuously soliciting.[1]

Medical Planning for Operation SHINGLE

As originally proposed, the Anzio landings, known by the code name SHINGLE, were to be made by one division carrying supplies for seven days, by which time it was to be in contact with forward elements from the Cassino front. When the stalemate before the Gustav Line precluded any hope of a quick breakthrough, plans were changed to land two divisions, reinforced, with another two divisions in reserve, and to provide resupply for as long as was necessary. It was hoped that determined attacks across the Rapido and Garigliano Rivers would divert enough enemy strength from the Rome area to permit a quick breakout by the Anzio forces, which would in turn compel a German withdrawal from the Gustav Line and bring about an early junction of troops from the two Allied fronts.

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[1] General sources for the Anzio campaign are: (1) *Fifth Army History*, vol. IV; (2) Starr, ed., *From Salerno to the Alps;* (3) Oprs Rpts, VI Corps, Jan–May 44; (4) Alexander, "The Allied Armies in Italy from 3rd September, 1943, to 12th December 1944," Suppl. to the *London Gazette*, 6 June 1950, pp. 2908–13, 2917; (5) Mark W. Clark, *Calculated Risk;* (6) Truscott, *Command Missions;* (7) Winston S. Churchill, *The Second World War: Closing the Ring* (Boston: Houghton Mifflin Company, 1951); (8) American Forces in Action, *Anzio Beachhead* (Washington, 1947); (9) Morison, *Sicily-Salerno-Anzio;* (10) Wesley Frank Craven and James, Lea Cate, eds., "The Army Air Forces in World War II," *Europe: ARGUMENT to V–E Day*, (Chicago, The University of Chicago Press, 1951); (11) Albert Kesselring, *Soldier's Record*, pp. 232–37; (12) Taggart, ed., *History of the Third Infantry Division in World War II*; (13) Howe, *1st Armored Division*; (14) *The Fighting Forty-fifth*, pp. 71–86. The more important medical sources are: (15) Annual Rpt, Med Sec, MTOUSA, 1944; (16) Annual Rpt, Surg, Fifth Army, 1944; (17) Annual Rpt, Surg, VI Corps, 1944; (18) Clift, Field Oprs, pp. 265–83; (19) Rollin L. Bauchspies, "The Courageous Medics of Anzio," *Military Medicine*, CXXII, (January–June 1958). 53–65, 119–28, 197–207, 267–272, 338–359, 429–448; (20) Unit rpts of individual med units mentioned in the text.

Operations on the Anzio front, like those elsewhere in Italy, can be properly understood only in terms of broad Allied strategy for the war as a whole. The build-up in England for the cross-Channel attack took precedence over everything else. Three veteran U.S. divisions—the 1st, 9th, and 2d Armored— had already been diverted from the Mediterranean, together with most of the 82d Airborne. With them went medical detachments, supporting medical battalions, and evacuation hospitals. Seasoned commanders were also being withdrawn for major roles in the coming campaign in France. Eisenhower, Bradley, and Patton were followed to England in January 1944 by Montgomery, whose successor as Eighth Army commander was General Sir Oliver Leese; and Tedder, who turned over command of the Mediterranean Allied Air Force to Lt. Gen. Ira C. Eaker. Lt. Gen. Jacob L. Devers became deputy theater commander under Wilson, and commander of the U.S. ground forces in the Mediterranean. The invasion of southern France, which was already in the planning stage, would divert still more combat and service troops from Italy. In a word, the Italian campaign remained a diversion, to immobilize as many German troops as possible. The Allied armies in Italy were nevertheless expected to win their battles.

COLONEL BAUCHSPIES

Medical planning for the Anzio landings, both at army and at corps levels, followed the tactical plans, making full use of experience gained in Africa and Sicily and on the Salerno beaches. The operation was to be carried out by VI Corps, under command of General Lucas. The assault troops were to be the British 1st Division, assigned from Eighth Army, and the U.S. 3d Division, with the 45th and 1st Armored Divisions in reserve. The landing force was also to include two British Commando and three Ranger battalions, the 504th Parachute Infantry regiment, and the 509th Parachute Infantry Battalion. In addition to the normal medical detachments and organic medical battalions, medical support for VI Corps was to be supplied by the 52d Medical Battalion; the 93d, 95th, and 56th Evacuation Hospitals; the 33d Field Hospital, with the British 12th Field Transfusion Unit attached; the British 2d Casualty Clearing Station; the 549th Ambulance Company; and a detachment of the 2d Auxiliary Surgical Group.

Medical planning for the Anzio operation was directed by Fifth Army surgeon, Joseph I. Martin, now a brigadier general, and Colonel Huddleston, who had been VI Corps surgeon since Salerno. Colonel Huddleston also directed medical services on the beachhead until he was killed by artillery fire while emerging from corps headquarters on 9 February 1944. He was succeeded by Col. Rollin L. Bauchspies, commanding officer of the 16th Evacuation Hospital.

Medical support was based on a projected D-day casualty rate of 10 percent of the assault troops and 5 percent of the remainder, with a daily hospital admission rate thereafter of five per thousand from all causes.

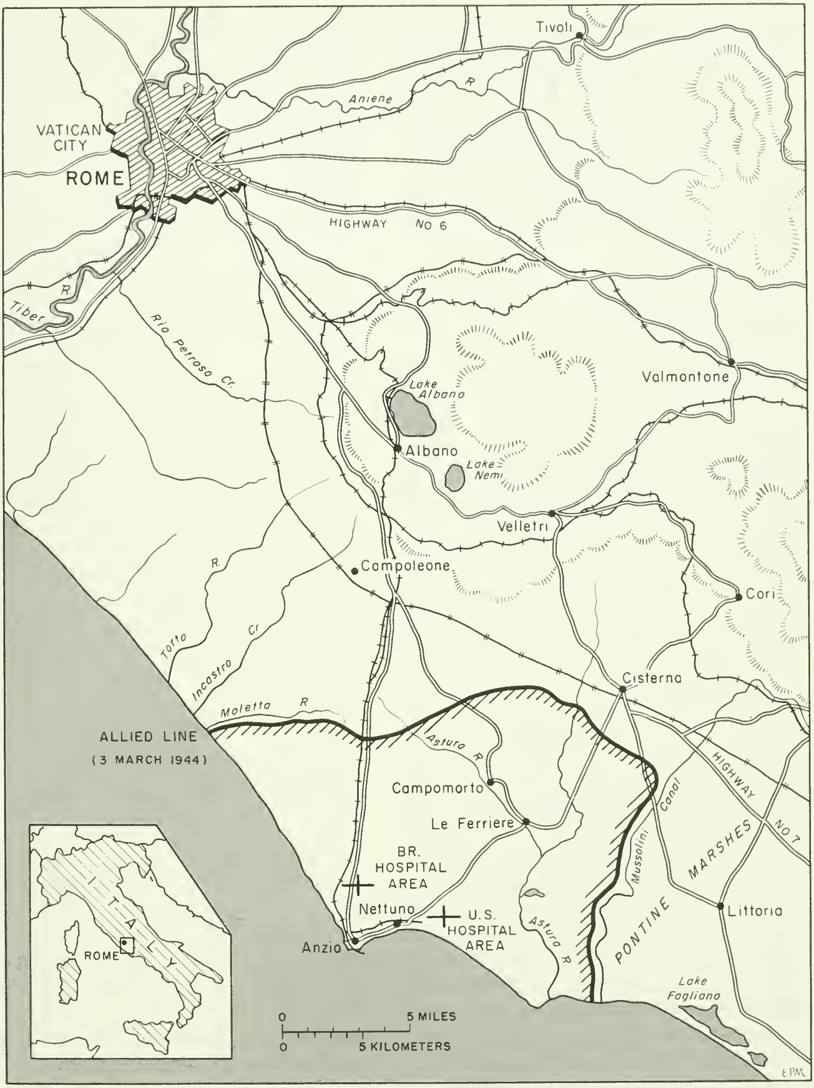
All medical units were to be combat-loaded for greater speed in establishing themselves ashore. Aid stations were to go in with the landing waves, to be followed as quickly as possible by the installations of the beach group, under initial control of the 540th Engineer Shore Regiment. In the latter category, the 52d Medical Battalion was to set up a collecting-clearing station to receive casualties from the aid stations and evacuate to the ships, while the 33d Field Hospital was to establish an adjacent unit to care for nontransportables. The collecting companies of the 3d Medical Battalion, organic to the 3d Division, were to land at H plus 6 and move inland to assume their normal functions, with the 3d Division clearing station following two hours later. The two 400-bed evacuation hospitals, the 93d and 95th, were also to go ashore on D-day.

The British assault was to be similarly supported, with two field dressing stations and a beach dressing station, backed up by the 2d Casualty Clearing Station. Hospital ships were to be available off both British and American beaches until D plus 3, after which they were to come when requested by the senior surgeon on the beachhead. Normal medical supplies were to be augmented by additional items carried ashore by aidmen, and the 1st Advance Platoon of the 12th Medical Depot Company was to maintain a 10-day reserve on the beachhead. During the assault phase, task force and subtask force surgeons were to be responsible for all medical units accompanying their forces.

Combat Medical Service

Landing Phase

Anzio and nearby Nettuno are small resort towns on the west coast of Italy, about 30 miles south of Rome. (*Map 24*) Ten miles to the east, the Mussolini Canal separates the Anzio plain from the reclaimed Pontine Marshes, while on the northwest rolling, partially wooded farmlands, cut by deep gullies, extend about 25 miles to the Tiber. Some 20 miles


Tivoli
VATICAN CITY
ROME
Aniene R
HIGHWAY NO 6
Tiber R.
Rio Petroso Cr.
Lake Albano
Albano
Lake Nemi
Valmontone
Velletri
Campoleone
Cori
Torto R.
Incastro Cr
Moletta R
ALLIED LINE
(3 MARCH 1944)
Cisterna
Astura R
Campomorto
Le Ferriere
BR. HOSPITAL AREA
Nettuno
U.S. HOSPITAL AREA
Anzio
Astura R.
Mussolini Canal
PONTINE MARSHES
HIGHWAY NO 7
Littoria
Lake Fogliano
ITALY
ROME
0 5 MILES
0 5 KILOMETERS
EPM

Map 24—Anzio Beachhead and Surrounding Areas north of Anzio rise the Alban Hills, or Colli Laziali, with Highway 7—the ancient Appian Way—skirting the southern shoulder of the hill mass through Albano and Velletri, and running southeast to Terracina on the coast, about midway between Rome and Naples. Highway 6, the direct route from Cassino to Rome, flanks the northern slopes of the Alban Hills, coming at its closest point within 30 miles of Anzio.

The original mission of VI Corps was to seize the Alban Hills and cut both highways, which formed at once the supply lines and the escape routes of the German *Tenth Army* entrenched behind the Gustav Line. The orders finally given to General Lucas were somewhat modified, in the light of anticipated difficulties. VI Corps was to "seize and secure a beachhead in the vicinity of Anzio" and "advance on Colli Laziali," but the timing and extent of the advance were not predetermined. The key points to be enveloped were Campoleone, eighteen miles north of Anzio on tht Albano road, and Cisterna, astride Highway 7 a similar distance to the northeast.

While German intelligence had noted Allied preparations for an amphibious operation, the enemy high command had been deceived by feints and raids at various points into expecting the assault to be made north of Rome. Vigorous thrusts along the main Fifth Army front, from Cassino to the mouth of the Garigliano, further confused the enemy, and served to occupy his reserves. The Anzio beaches were therefore virtually undefended when the first Allied troops waded ashore at 0200 on 22 January 1944. The 3d Division, commanded by General Truscott, landed three regiments abreast between Nettuno and the canal, while the Commandos led the British assault six miles northwest of Anzio. The town itself, with mole and port facilities nearly intact, was quickly taken by Col. William O. Darby's Rangers. The 509th Parachute Infantry Battalion took Nettuno almost as quickly.

German air attacks began shortly after dawn, coupled with spasmodic fire from long-range guns, but the work of unloading men and supplies was not seriously hampered. By midnight, about 36,000 men, 3,200 vehicles, and large quantities of supplies were ashore, approximately 90 percent of the equipment and personnel of the assault convoy.

Casualties were negligible, and so the medical plan was altered to give priority to combat troops and material. Battalion aid stations went ashore with the combat units to which they were attached, and litter squads from the 52d Medical Battalion accompanied the 3d Division as well as the Rangers and paratroops. The beach collecting-clearing station of the corps medical battalion was not needed, however, and did not go ashore until twenty-four hours after the first landings. The 3d Division clearing station was not established until the afternoon of D plus 1.

The few casualties that occurred in the early hours of the assault were held at battalion aid stations or carried direct to LST's equipped to care for them. Aside from these aid stations, the only medical installation ashore on D-day was the 2d Platoon of the 33d Field Hospital, which landed its personnel and attached surgical teams at 1330, received its equipment three hours later, and was ready to accept patients about 1800. The hospital was set up on the beach southeast of Nettuno.

Until the bulk of the troops had advanced inland and a normal chain of evacuation had been set up, most casualties were littered from the battalion aid stations directly to the field hospital.

For 48 hours this unit was the only hospital functioning on the beachhead. It was soon filled to capacity, with three operating tables in constant use and a backlog of 20 to 30 cases. Tents were several times pierced by shell fragments and debris, but no casualties resulted. The remaining platoons of the 33d Field were put ashore during the afternoon of 23 January, D plus 1, but remained in bivouac, the 3d Platoon until 26 January, the 1st until 8 February. In the interval, their personnel and equipment were drawn upon to expand the facilities of the 2d Platoon.

Both the 93d and 95th Evacuation Hospitals were landed on D plus 1, but were not in operation until the late afternoon of 24 January. The 93d occupied buildings in Anzio; the 95th was under canvas midway between Anzio and Nettuno. The British 2d Casualty Clearing Station was established just north of Anzio about the same time.

German air raids on the harbor area and the rising tempo of long-range shelling quickly made these hospital sites untenable. There was, in fact, no safe area on the beachhead, since every foot of the ground held by Allied troops could be observed by the enemy and reached by his guns. Colonel Huddleston selected an open field about two miles east of Nettuno as the lesser hazard, and a hospital area was laid out. The 56th Evacuation, which arrived on 28 January, was set up here, and took all patients over the next two or three days while the 93d and 95th Evacuation Hospitals and the 33d Field Hospital moved to the new location. A similar area for British medical installations was established about two miles north of Anzio on the road to Rome. (*See Map 24.*)

Evacuation was from the beach until the harbor became available on 29 January, D plus 7. LCI's (Landing Craft, Infantry) and other small craft carried patients to LST's or to hospital ships standing offshore, but the process was difficult at best. The water was rough five days out of seven. Frequent air raids and intermittent shelling made it dangerous to hold casualties on the beach, while the ships standing by were easy targets. Even the Geneva cross was scant protection. Three British hospital ships were deliberately bombed offshore on the night of 24 January, and one of them, the *St. David,* was sunk.

On the military side the attack, which opened so auspiciously, was quickly stalled. From the beaches the troops moved inland against light opposition. All initial objectives, including the bridges across the Mussolini Canal, were secured by noon of D-day, but the key towns of Campoleone and Cisterna were still miles away, and the Alban Hills were but a blister in the distance. January 24 found VI Corps still occupying an area roughly fifteen miles wide and no more than seven miles deep. By this time the benefit of surprise had been lost. Air attacks were increasing in violence and frequency. Huge railway guns that the men came to know as "Whistling Willie" and the "Anzio Express" were trained on the beachhead from concealed positions, changing nightly. All along the 26-mile perimeter of the Allied front, opposition was stiffening as new German units were rushed piecemeal to the area

Transferring Wounded From an LCI to a British Hospital Ship Off Anzio

over roads and rail lines still usable despite the pounding of Allied bombers.

General Lucas decided to dig in against an anticipated counterthrust and wait for reinforcements before advancing his lines. The 1st Special Service Force, the 45th Infantry Division, and half of the 1st Armored were brought up from Naples, and the attack was launched on 30 January. It was too late. The Germans had moved more swiftly, bringing fresh divisions from northern Italy, southern France, Yugoslavia, and even from the static Eighth Army front to wipe out what Hitler called the "abscess" below Rome.

For seventeen weeks Anzio beachhead remained a "flat and barren little strip of Hell"; a front without a rear, where hospitals stood only six miles from the fighting lines and were backed against the sea. Instead of the wildcat Churchill had hoped to hurl at the enemy's flank, SHINGLE had become a "stranded whale."[2]

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[2] The first quote is from General Clark, *Calculated Risk*, page 7; the second is from Winston Churchill, *Closing the Ring*, page 488.

Attack and Counterattack

The VI Corps attack launched on 30 January was a twopronged drive in which the 3d Division was to cut the railroad at Cisterna and seize the town, and the British 1st Division was to take Campoleone and advance to cut Highway 7 at Albano. The 1st Armored was to pass around the British 1st to the left and storm Colli Laziali from the west. The attack began disastrously when the 1st and 3d Ranger Battalions, which were to open the way for the 3d Division, were ambushed and destroyed. Only 6 of the 767 men engaged got back. Among the missing were 21 enlisted men of the 52d Medical Battalion. The 4th Ranger Battalion, following with the 15th Regimental Combat Team of the 3d Division, also suffered heavy losses. After three days of fighting, the Cisterna assault was halted two miles short of its goal.

The drive up the Albano road was no more successful. The British 1st Division was met by well-placed armor, and the U.S. 1st Armored had to be hastily diverted to reinforce the infantry. Again the objective was approached but not reached, and the attack was halted at nightfall on 31 January.

With the equivalent of four divisions under his command, General Lucas had been stopped by a German army of approximately equal size. Though heavy losses had been inflicted on the enemy, his line had not been breached. On 2 February, VI Corps was ordered to take defensive positions, and control of hospitalization and evacuation from the beachhead reverted to Fifth Army.

During the next two weeks both sides worked furiously to build up strength, but the initiative lay with the Germans, who launched repeated attacks against different sections of the front and kept up an intermittent shelling of Allied positions. Consolidated into the *Fourteenth Army* under General Eberhard von Mackensen, the German strength was impressive. The Allies brought up the British 56th Division from the Garigliano front, but few more units were available. VI Corps could only compensate for deficiencies in manpower by heavily reinforcing its artillery and tanks.

The major German drive was launched down the Albano road on 16 February and reached its maximum development two days later. The crisis for the beachhead came during the night of 18–19 February when the Germans were stopped only six miles from the sea. Allied air superiority and the support of naval guns were contributing factors.[3] General Truscott was made deputy commander of VI Corps at this time, command of the 3d Division passing to Brig. Gen. John W. O'Daniel. Truscott replaced Lucas as corps commander on 23 February.

A renewed German drive on 28 February was also stopped after several days of continuous fighting, much of it hand-to-hand. By 5 March the battle of the beachhead was over. The Germans tacitly acknowledged defeat and went over to the defensive, while Alexander ordered a general regrouping of the Allied forces on the main front in preparation for a drive on Rome.

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[3] Rpt, Supreme Allied Commander, Mediterranean, to CCS, on Italian Campaign, 8 Jan 44–10 May 44.

PFC. LLOYD C. HAWKS, *3d Division aidman, received the Medal of Honor for his heroic rescue on 30 January 1944 of two wounded men in the Anzio area from an exposed position within 30 yards of the counterattacking enemy, although he himself was twice wounded.*

The beachhead line was approximately that of 24 January, with some expansion toward Cisterna. For the next two and a half months VI Corps waited, resting, reinforcing, and building reserves of ammunition and supplies. Every part of the beachhead remained subject to enemy fire, and limited engagements continued intermittently, but the issue was no longer in doubt.

Early in March the British 5th Division replaced the battered 56th, and later that month the U.S. 34th Division was added to the Anzio forces. In May, shortly before the final breakout, the 36th Division was also attached to VI Corps.

Medical support of the Anzio forces after the landing phase followed a normal pattern, though all the clearing stations but one, through sheer necessity, were eventually concentrated in the hospital area east of Nettuno. The 3d Division clearing station was originally established in the area later selected for hospital use, but moved on 14 February to Acciarella, about midway between Nettuno and the Mussolini Canal on an east-west line. There it was joined by a platoon of the 33d Field Hospital, but both units, after being heavily shelled on the last day of the month, moved hastily back to the hospital sector. The 45th Division clearing station was initially established somewhat closer to Nettuno, but it too moved into the hospital area on 8 March. The corps clearing station of the 52d Medical Battalion was sited in the hospital area throughout the life of the beachhead. Clearing stations of the 34th and 36th Divisions were set up there on arrival.

The only exception was the clearing station of the 47th Armored Medical Battalion, supporting the 1st Armored Division, which was located in the British hospital area about two miles north of Anzio during the entire period.

Evacuation from aid stations and collecting stations was by hand litter, ambulance, and jeep. The smallness of the beachhead meant that evacuation distances were never great, but by the same token the tasks of litter bearers and ambulance drivers were always hazardous. Evacuation was mainly at night because of the ability of the enemy to sweep the beachhead with artillery fire and the frequency of air attacks.

Hospitalization on Anzio Beachhead

The decision to locate all hospitals in the open, made after the 24 January bombings, introduced many new problems, but it undoubtedly saved the beachhead medical service. Both Nettuno and Anzio, which offered the only alternatives, were pounded to rubble by enemy guns and bombs long before the campaign was over. The area selected for the U.S. installations was on low ground near the sea. Drainage was poor and the water table so close to the surface that disposal pits and foxholes could not be dug to proper depth. With all installations under canvas, the prevailing dampness added to the heating problem, making stoves, fresh straw, and extra blankets necessary. By 2 February, when control of the hospitals reverted to Fifth Army, the 56th, 93d, and 95th Evacuation Hospitals and two platoons of the 33d Field Hospital were in the area with an aggregate Table of Organization bed strength of 1,750.[4]

Beachhead hospitals had been functioning at their new locations for no more than a week when the first of a long series of bombings and shellings occurred. It was impossible to put the medical installations out of range, and equally impossible in that overcrowded wedge of purgatory to site them a safe distance from legitimate military targets. Even when the beachhead was blotted out by a protective screen of smoke, the German gunners managed to find their marks. So good, indeed, was their observation, and so accurate their marksmanship, that it was impossible to attribute all the damage in the hospital area to accident.

On 7 February an enemy plane, closely pursued by Allied fighters, jettisoned its load over the hospital area. Five antipersonnel bombs landed on the tents of the 95th Evacuation Hospital, where 400 patients were being cared for. Newly wounded men were being carried in from the ambulances, the X-ray tent was crowded, and the operating rooms were working to capacity. Twenty-six persons were killed and 64 wounded. The dead included 3 nurses, 2 medical officers, a Red Cross worker, 14 enlisted men, and 6 patients. The hospital commander, Colonel Sauer, was among the wounded. The X-ray equipment was a total loss, twenty-nine ward tents were destroyed, and numerous smaller items of equipment were damaged.

Within an hour the dead had been removed, the wounded hospitalized, and surgical cases among the patients of the 95th transferred to other installations. Doctors and nurses continued their work, but personnel losses and damage to equipment were too great to overcome. General Martin, after reviewing the situation with his beachhead deputy, Col. Henry S. Blesse of the 56th Evacuation Hospital, ordered a replacement. The 95th changed places with the 15th Evacuation on the static Cassino front, the latter unit moving by rail to Naples and on two LST's to the beachhead. The 15th brought its own records, but only such equipment and tentage as was needed to replace that of the 95th destroyed by the bombing. The new unit was in operation before the end of the day on 10 February.

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[4] In addition to sources cited earlier in this chapter, see Lt. Col. Henry M. Winans, 56th Evacuation Hospital, Letters, 1943–44, for a vivid personal narrative of hospital life on the beachhead.

U.S. Hospital Area at Anzio

The 15th received a rough welcome to the beachhead. On that day long-range German guns dropped shells in the hospital area, killing two nurses, one of them the chief nurse, and an enlisted man at the 33d Field Hospital. Four officers and seven enlisted men were wounded. One tent was burned and others damaged. Again the wounded included the hospital commander, Lt. Col. Samuel A. Hanser. Patients were carried on their mattresses to the adjoining 56th Evacuation. Blood transfusions in progress at the time of the attack were not interrupted, one attendant holding the needle in place while another held the bottle of plasma during the move. Unlike the 95th Evacuation, the 33d Field was able to resume normal operation the following day.

The U.S. and British hospital areas were bombed on 12 February, and the British area again on the 17th and 19th, some casualties resulting in each instance. During the remainder of the month, while the German counterattack continued, and on through March there was no letup. On 17 March the British 141st Field Ambulance suffered three direct hits, with 14 killed and 75 wounded. On the 22d it was the turn of the 15th Evacuation, which was blanketed by 88-mm. shells. Five persons were killed and 14 wounded. No wonder the combat troops called the hospital area "Hell's half acre" and felt safer in foxholes at the front!

General Truscott was convinced that the 22 March shelling of the 15th Evacuation Hospital was deliberate. Following a conference with Fifth Army and VI Corps medical officers, he ordered his engineers to reconstruct the British and American hospital areas so as to give maximum protection.[5] The hospitals could not be moved. There was no safe place for them to go. They could not even go under ground, but they could be partially dug in. By this time the rains had become less frequent and the ground had dried up enough to permit excavation of tent sites to a depth of 3 or 4 feet. Two ward tents were pitched in each excavation end to end, with earth revetments 3½ feet thick at the base and 2 feet at the top built up three to 5 feet around the tent walls. Steel stakes and chicken wire helped hold the revetments in place. Sandbag baffles inside divided the double tent into four compartments of ten beds each. Patients and personnel were thus secure against anything but a direct hit. Operating tents were given the additional protection of a 2-inch plank roof covered with sandbags.

The 94th Evacuation Hospital, with the 402d Collecting Company of the 161st Medical Battalion attached, arrived on the beachhead late in March with the 34th Division. The unit opened on 29 March, taking the bulk of the new casualties for the next five days while the other hospitals dug in.

That same night, 29 March, the hospital area was again bombed, only a few hours after General Clark had inspected the installations. The 93d and 56th Evacuation Hospitals were hit, with a combined total of 8 killed and 68 wounded. The 56th suffered further damage on the night of 3–4 April and on the morning of 6 April, when long-range German guns once more pounded the area. Too badly damaged to continue on the beachhead, the 56th was replaced on 8 April by the 38th Evacuation Hospital, the 56th taking over the installations of the 38th at Carinola on the southern front. A week later the 11th Evacuation from Casanova, also on the southern front, changed places with the hard-hit 93d. British hospitals were similarly rotated with those in the Cassino area. Sporadic shelling and bombing continued throughout the life of the beachhead, but casualties and damage were considerably reduced by the work of the VI Corps engineers.

Hospitalization policies at Anzio were dictated, like everything else on the beachhead, by the tactical and geographical situation. In the early stages of the campaign all casualties were evacuated to Naples as quickly as they could be made transportable. This entailed a heavy loss of personnel, however, and at the beginning of March the three platoons of the 33d Field Hospital were set up as a single 400-bed unit to hold patients expected to recover in fourteen days. Although a platoon of the 52d Medical Battalion clearing company set up a 200-bed venereal disease hospital on 19 February, the problem was never serious at Anzio. Cases were confined to

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[5] Truscott, *Command Missions*, p. 358.

General Blesse Congratulating Colonel Blesse *on receiving the Silver Star.*

recurrences and to infections among new troops, contracted before reaching the beachhead. The VD hospital nevertheless treated 3,000 patients, U.S. and British, during its three months of operation.

Both the 52d Medical Battalion and a platoon of the 602d Clearing Company, 162d Medical Battalion, which arrived at Anzio in mid-February, operated mobile dispensaries for troops in isolated areas. The 602d also ran an aid station, primarily for service troops working in and around the port.

The U.S. hospitals at Anzio, after the opening of the 94th Evacuation near the end of March, included a 750-bed and three 400-bed evacuation hospitals, and a 400-bed field hospital, or a total of 2,350 Table of Organization beds. Add to these the 200-bed VD hospital of the 52d Medical Battalion and beds available in the clearing stations of the four U.S. divisions active on the beachhead before the breakout of 23 May, and the maximum T/O strength was approximately 3,500 beds, or an actual strength with normal expansion of not more than 5,000. During the period of heaviest fighting, bed strength, including expansion, was less than 4,000.

Yet from 22 January through 22 May 1944, these hospitals cared for 33,128 patients, of whom 10,809 suffered from battle wounds, 4,245 from injuries, and 18,074 from disease. In addition to these an unrecorded number of civilians were cared for, since no other facilities were available to them. Some 22,000 civilians were eventually removed from the beachhead, only 750 being allowed to remain.[6]

In the same 4-month period, British hospitals at Anzio cared for 14,700 cases, including all causes.

Casualties among Medical Department personnel were high: 92 killed, including 6 nurses; 387 wounded; 19 captured; and 60 missing in action—558 in all.[7]

Evacuation From the Beachhead

The original plans for the Anzio Campaign called for evacuation by hospital ship. As the stay of VI Corps on the beachhead lengthened, however, and casualties mounted, LST's were pressed into service. There were simply not enough hospital ships and hospital carriers available. Even when they could be dispatched to the beachhead, they drew too much water to dock at the wharf, and the sea was often too rough to permit transfer of patients from smaller craft offshore. There was one stretch of fourteen days during which no hospital ship reached Anzio. To accommodate such periods of interrupted evacuation, the Anzio hospitals tried to maintain a reserve of 900 beds, but the sudden violent actions that characterized the Anzio fighting often precluded maintenance of any reserve at all.[8]

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[6] Bauchspies, "The Courageous Medics of Anzio," *Military Medicine*, CXXII (January–June 1958), p. 268.

[7] Annual Rpt, Surg, Fifth Army, 1944. *Fifth Army History*, pt. IV, p. 164, gives only 82 killed, but the surgeon's report appears to be the more accurate source.

In these circumstances the process of evacuation had to be carefully regulated and controlled. Capt. Eugene F. Haverty was sent to the beachhead by General Martin on 1 February to assume the duties of evacuation officer. His energy, skill, and fortitude in the performance of his task were outstanding, but VI Corps did not benefit long from his presence. Captain Haverty was killed on 29 February while directing the loading of casualties on an LST. The Fifth Army hospitalization and evacuation officer, Colonel Camardella, took personal charge of evacuation from the beachhead after Captain Haverty's death, returning to the southern front in time to participate in planning for the forthcoming drive on Rome. His place at Anzio was taken by Major Selesnick, who had started the year as Fifth Army venereal disease control officer.

The use of LST's to supplement hospital ships for evacuation to Naples made it necessary to equip these vessels with medical supplies and utilities not normally carried. It was also necessary to supply medical personnel to care for patients on the 20- to 30-hour run to Naples. Initially, two hospital ship platoons of limited service men carried out this assignment. They were supplanted at the end of March by personnel of the 56th Medical Battalion, organized into four platoons, each with a medical officer, an MAC officer, and twenty enlisted men. The average load was 100 to 150 litter patients and a similar number of ambulatory patients, but the newer type LST's introduced toward the end of the period could accommodate more than 200 litter patients. Hot meals were supplied the litter patients from food containers. The walking patients were fed in the ship's mess.

Patients were moved on a prearranged schedule from hospitals to the docks by the 549th Ambulance Company. Loading was the responsibility of the 1st Platoon, 602d Clearing Company, of the 162d Medical Battalion. Civilians were evacuated to Naples under the same principles that guided the evacuation of military personnel.

Air evacuation could not be used at Anzio before the junction of the two armies and the dissolution of the beachhead. The Nettuno airstrip was under constant observation by the enemy, and generally unsafe for anything larger than a Piper Cub. Even these small observation planes were used only for emergencies, to bring blood or urgently needed drugs.

From 22 January through 22 May, 23,860 U.S. casualties and 9,203 British

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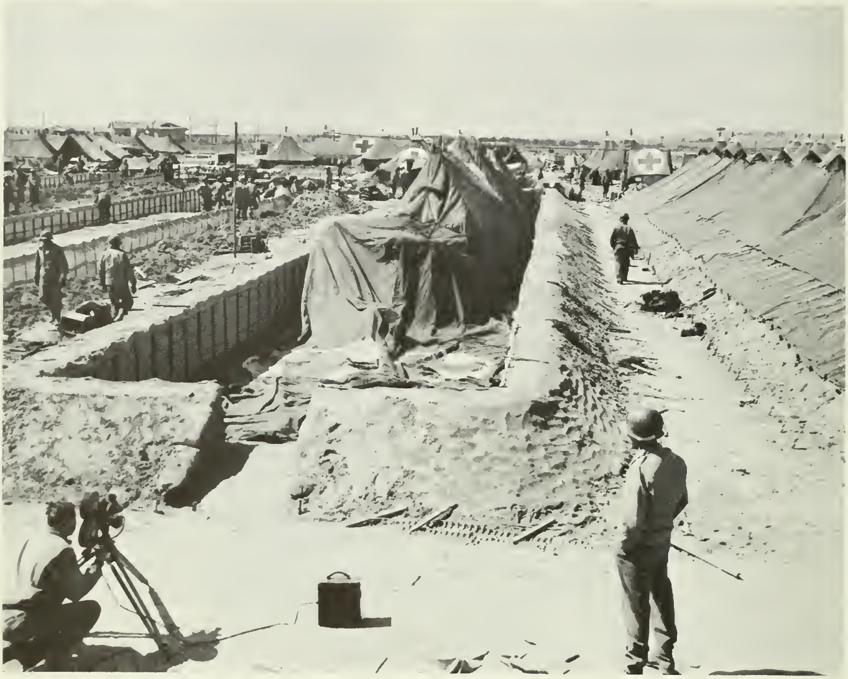
[8] (1) Annual Rpt, Surg, Fifth Army, 1944. (2) ETMD for Mar 44.



Anzio Hospitals Being Dug In After the Ground Dried

casualties, or a total of 33,063 were evacuated safely from Anzio beachhead.

Medical Supplies and Equipment

Following the Salerno pattern, personnel of the 1st Advance Platoon, 12th Medical Depot Company, were on the Anzio D-day convoy, attached to the beach group. Each unit carried all items called for in its Table of Basic Allowances, with extra blankets and litters added. Other additional supplies, such as plasma, atabrine, plaster of paris, dressings, and biologicals were carried ashore in the special waterproof containers whose worth had been demonstrated at Salerno. On the basis of the Salerno experience, supply estimates were increased to compensate for losses through accidental immersion as well as by enemy action. The most important departure from the earlier planning for amphibious operations was provision for carrying supplies adequate for a 10-day level on the D-day convoy. This level had not been reached at Salerno until D plus 12.[9]

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[9] This section is based primarily on: (1) Annual Rpt, Surg, Fifth Army, 1944; (2) Annual Rpt,

PROTECTING OPERATING TENTS WITH TWO-INCH PLANKS AND SANDBAGS

A medical supply dump was established on the beach at 0700 on D plus 1. The following day, 24 January, the supply platoon was relieved from attachment to the beach group and passed to control of the VI Corps surgeon. A permanent site for the depot was located on the Anzio-Albano road, near the cathedral. A 4-story building, 70 x 40 feet, housed offices, issue room, shipping section, and living quarters for personnel. Two storage tents were set up for items that might be damaged by water, other supplies being stored in the open. In the early days of the beachhead all requisitions were honored if they were signed by a responsible person, even though a scrap of paper might be substituted for the proper form. The time required to fill a requisition ranged from one-half hour to six hours, depending on the items requested and the extent of enemy shelling and bombing.

The build-up of supplies did not take place according to plan, but thanks to

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Surg, VI Corps, 1944; (3) Annual Rpt, 12th Med Depot Co, 1944; (4) Maj Richard P. Gilbert, MAC, MS, Combat Medical Supply Operations—The Anzio Beachhead; (5) Davidson, Medical Supply in MTOUSA, pp. 73–79.

the light opposition in the landing phase, no damage resulted. While the 10-day level contemplated arrived on schedule, the water was too rough to permit offshore unloading until D plus 5, the only medical supplies available in the interval being those carried ashore by medical units and combat troops. This situation was one frequently repeated at Anzio, since the Liberty ships used for cargo drew too much water to dock at the wharf. On several occasions, emergency requisitions had to be sent to Naples for items that were aboard ships anchored out from the shore but unavailable. These emergency supplies would be delivered by LST, creating an overstock of some items when the cargo vessels managed to unload. Supplies delivered by LST were loaded on trucks at Naples and driven directly to the depot from the landing craft, permitting the vessels to withdraw to safety with a minimum of delay.

Replacement items, both of supply and equipment, were a constant problem on the beachhead because of the continual destruction by enemy shells and bombs. There came to be some truth as well as humor in the remark that "ward tents were sent up daily with the rations." The problem was further complicated by the rotation of hospitals with those on the Cassino front, since the arriving units did not always bring sufficient equipment to replace what had been destroyed.

Another recurrent supply problem was that of property exchange. The hospital ships and carriers were able to exchange litters, blankets, and splints in normal fashion, but LST's used for evacuation were seldom so equipped. The time factor, moreover, precluded any careful bookkeeping on exchangeable items. The problem was finally solved by sending a truck to Naples with each LST carrying patients. At Naples the truck was loaded with litters and blankets from the base hospitals to be returned to Anzio in exchange for those accompanying the patients.

Despite the difficulties inherent in the situation, including the constant hazard that supply personnel shared with all others on the beachhead, the Anzio medical service at no time suffered any supply or equipment shortage severe enough to impair the quality of medical care.

Professional Services on the Beachhead

Medicine and Surgery

Surgery Under Fire—At Anzio all surgery was forward surgery. There were no field hospital units to take nontransportable cases from the clearing stations because the evacuation hospitals were as close to the front as the clearing stations themselves. There was no screening of patients forward of the hospital area. Neither was there more than rudimentary specialization, except for the use of the 33d Field Hospital for short-term cases after 1 March and the experimental concentration of neuropsychiatric cases in the 56th Evacuation. Each hospital took all types of wounds, limited only by its own bed capacity. Teams of the 2d Auxiliary Surgical Group operated in all of the beachhead hospitals, including the British installations.[10]

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[10] Sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1944; (2) Annual Rpt, Surg, VI Corps, 1944; (3) Annual Rpt, 33d Fld Hosp, 1944;

56th Evacuation Hospital After Bombing and Shelling

Ten surgical teams of the group and 2 shock teams were on the D-day convoy, working in the 33d Field Hospital and the 95th Evacuation Hospital as soon as those units were set up. The 12 teams were reinforced before the Anzio interlude was over by 18 additional surgical teams, 2 orthopedic teams, 2 neurosurgical teams, a thoracic team, and a miscellaneous team. For the landing phase, each of the 4 British hospital carriers also had a surgical team of the 2d Auxiliary Group assigned for temporary duty. One officer and an enlisted man of the group lost their lives when the *St. David* was sunk by German bombs the night of 22–23 January. A nurse of the group was killed in action in the 10 February shelling of the 33d Field Hospital. In addition to these deaths in action, the 2d Auxiliary Surgical Group had 11 officers, 2 nurses, and 5 enlisted men wounded in the course of the Anzio Campaign.

The surgical load fell heavily on the hospital staffs as well as on the attached teams, but the work was of a high qual-

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(4) Annual Rpts, 1944, of 11th, 15th, 38th, 56th, 93d, 94th, and 95th Evacuation Hosps; (5) Annual Rpt, 2d Aux Surg Gp, 1944.

ity despite the fact that many of the cases were of types not normally encountered in evacuation hospitals. The 93d Evacuation, for example, handled 1,187 surgical cases during the month of February, entirely with its own staff. The 11th handled 1,240 surgical cases in one 11-day period, only 72 of which were cared for by attached teams. With the aid of 4 auxiliary teams, the 94th performed 138 operations in 24 hours.

At the time of the German counteroffensive in February, the casualty load was so great that some men with less severe wounds were evacuated to Naples for primary surgery, while others were sent back to base hospitals for postoperative care. The Fifth Army surgical consultant, Colonel Snyder, personally followed up these cases, shuttling back and forth between Naples and Anzio with reports that proved most useful to beachhead surgeons.

The Anzio surgeons were greatly aided by generous supplies of whole blood. Where Fifth Army had relied in the past primarily on plasma and on donors among hospital staffs and convalescent patients, the Anzio medical service had the advantage from the outset of the presence of a British field transfusion unit, supplied by a British blood bank. On 26 February the first American blood was received on the beachhead from the newly organized Naples blood bank. A total of 5,128 pints were received from this unit between 26 February and 25 May. Blood was delivered regularly thereafter by LST, with an occasional emergency shipment by Cub plane. The British 12th Field Transfusion Unit continued to be the distributing agency throughout the life of the beachhead. Between 22 January and 4 June 10,624 pints of whole blood were used in U.S. hospitals, for an average of 2.01 pints per case; 3,685 pints were used in British hospitals, averaging 2.95 pints per case.[11]

Neuropsychiatry—The conditions under which VI Corps operated at Anzio, where all positions were subject to enemy shelling at any time and harassing actions around the perimeter were a constant threat, were inevitably such as to produce a high incidence of psychiatric disorders. The same conditions, however, made it impossible to retain psychiatric casualties for treatment close to the battle lines.[12]

The month of February 1944, when fighting was most severe and the continuance of the beachhead itself was at stake, showed a psychiatric case rate of 4 per 1,000 per month in the 1st Armored Division, 16.7 in the 3d Division, and 23 in the 45th Division. The pressure for beds in beachhead hospitals was so great that these psychiatric casualties had to be evacuated to base hospitals in less than two days, despite the showing of theater experience that a high proportion could have been returned to duty if treated in the forward area.

The first approach to the problem was the designation of the 56th Evacuation Hospital on 16 February to handle all psychiatric cases. It was hoped that this

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[11] (1) Hist of the 15th Med Gen Lab, 20 Dec 42–31 May 44. (2) Annual Rpt, Surg, Fifth Army, 1944. (3) Bauchspies, "The Courageous Medics of Anzio," *Military Medicine*, CXXII (January–June 1958), p. 444.

[12] Sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1944; (2) Annual Rpt, Surg, VI Corps, 1944; (3) Annual Rpt, Surg, 3d Inf Div, 1944; (4) Hanson, ed., "Combat Psychiatry," *Bulletin, U.S. Army Medical Department*, Suppl number (November 1949).

TABLE 10—DISPOSITION OF PROBLEM CASES IN THE 3D DIVISION, 4 MARCH–30 APRIL 1944

Dispositions	Disciplinary Cases		Psychiatric Cases		Total
	Number	Percent	Number	Percent	
Total	81	100	90	100	171
To duty	24	30	59	66	83
To hospital	18	22	31	34	49
To stockade	39	48	....	....	39

Source: Annual Rpt, Surg, Fifth Army, 1944.

specialization would permit more rapid identification and evacuation of severe cases, permitting longer retention of those most likely to respond to treatment if retained on the beachhead. The experiment did not work out. The 56th Evacuation admitted 483 such cases in the period 16–29 February, of which only 9.6 percent were returned to duty.

The focus of psychiatric treatment was then shifted, still on an experimental basis, to the division level. On 1 March a provisional platoon was organized in the 3d Division, with a cadre of one officer and seven carefully selected enlisted men, under supervision of the division psychiatrist, Capt. Robert J. Campbell. The platoon was attached to the 10th Engineer Battalion. Its ranks were filled up with "problem" cases referred by the combat units, which continued to carry the men on their rolls as on special duty status. Captain Campbell screened these cases, sending to the division clearing company for disposition all those showing need for hospital care. The disciplinary cases, and those of mild psychiatric disturbance, were retained in the provisional platoon, where they performed various duties while undergoing psychiatric treatment.

Between 4 March, when the first case was received, and 30 April the provisional platoon evaluated 171 referrals. (*Table 10*) The record was encouraging enough to warrant an extension of the principle to other divisions later in the Italian campaign.

Preventive Medicine

Trench Foot—Trench foot had become a problem to Fifth Army in the Winter Line campaign, but conditions were relatively good in the mountains before Cassino compared to those on Anzio beachhead. From January through most of March the temperature remained near freezing, with frequent rain. The whole area occupied by VI Corps was flat, much of it reclaimed swampland, with poor drainage and a high ground water level. Trenches, dugouts, and foxholes were usually half filled with water before they were completed. Add to these natural disadvantages the fact that the enemy had good observation of the entire area and guns to back it up, and the medical problem may be realized. It was suicidal to leave a foxhole in daylight, so the men stayed in their cramped positions, their feet often immersed in water and always wet, for ten or twelve hours at a stretch.

Trench foot was an inescapable concomitant.[13]

There were many conferences on the subject among medical officers, both British and American, but preventive measures were largely useless. The tactical situation made it impossible for the men to exercise their lower limbs properly, and the shortage of manpower precluded any effective rotation of men or units. Dry socks were sent to the front lines as frequently as possible, but the supply of socks and laundry facilities were alike limited. Even had it been possible to issue dry socks daily, as was done in the British sector,[14] men holding tenuously to positions on a front that might erupt at any moment could not be made to take off their shoes just to change socks. Had they been willing to do so, the new socks would have been as wet as the old in a few minutes.

In the circumstances, it is not surprising that 2,196 cases of trench foot were reported during the continuance of the beachhead. Although preventive measures were thus largely ineffective, the Anzio experience was turned to account in determining what clothing and equipment would be used in the winter of 1944–45. A study with this end in view was carried out by the 3d Division, and the data obtained furnished a basis for ordering future winter equipment for troops in the Mediterranean theater.[15]

Malaria Control—The same conditions that made trench foot inevitable also made the beachhead a natural breeding spot for mosquitoes. Indeed, the Anzio plain had been scourged by malaria for centuries. As soon as it became evident that the Allied forces might still be in the area after the onset of the malaria season, a complete control plan was worked out by American and British authorities. Beginning late in February, the beachhead was surveyed from the air for breeding places, and as much information as possible was collected about the local incidence of the disease. The results were studied by malariologists, and a control program was issued to all VI Corps units late in March.[16]

Among the steps taken was the establishment of a special school, operated by personnel of the 52d Medical Battalion, for instruction of the officers, noncomissioned officers, and enlisted men who were to carry out the preventive measures. Instructors were 2 Sanitary Corps officers and 3 Medical Department enlisted men who went to Anzio for that purpose. A total of 2,011 persons received six hours of instruction each. Suppressive therapy was started on 26 March, instead of 1 May as called for in NATOUSA directives.

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[13] (1) Annual Rpt, Surg, Fifth Army, 1944. (2) Annual Rpt, Surg, VI Corps, 1944. See also, Whayne and DeBakey, *Cold Injury, Ground Type*, pp. 101–25, *passim*.

[14] It should be noted that the incidence of trench foot on the beachhead was higher among U.S. troops than among British troops performing essentially the same duties under identical conditions. The reasons for the difference, in addition to changing socks daily, probably included the British practice of treating mild cases in quarters where they were not reported, and the British tendency to regard cold injury as a self-inflicted wound, subject to appropriate disciplinary action. Other factors were the superior boots and heavier wool socks issued by the British, and the fact that the British soldier generally stayed in the line for shorter periods of time than his U.S. counterpart.

[15] Final Rpt, Preventive Medicine Off, MTOUSA, 1945.

[16] (1) Annual Rpt, Surg, Fifth Army, 1944. (2) Annual Rpt, Surg, VI Corps, 1944. (3) Annual Rpt, 52d Med Bn, 1944. See also pp. 259–61, above.

The entire area was divided into segments, with each troop unit being made responsible for draining, dusting, or oiling standing and sluggish water, and for cleaning vegetation from the banks of waterways. Every shell hole, every abandoned foxhole or gun emplacement, every bomb crater was a potential breeding spot. So well were the troops indoctrinated that one beachhead soldier was heard to complain that if he spilled a canteen of water on the ground, someone would rush up to spray or drain it.

The VI Corps engineers, the 42d Malaria Control Unit, and Italian engineer battalions brought in for the purpose helped the combat troops carry out their individual assignments. A Corps Malaria Control Committee coordinated the whole program, receiving weekly reports from the responsible officers at division and unit levels, where the control organization was identical with that on the Cassino front.

The final success of the program cannot be fully evaluated, since the Anzio malaria season did not reach its height until June and July, after VI Corps had left the area. However, daily surveys failed to reveal the presence of the carrier, in either adult or larval form, while Allied troops were on the beachhead.

Dental Service

The problem of the dental service at Anzio, like that of the medical and surgical services, was one of organizing facilities so as to make maximum use of the limited personnel available. Laboratory and prosthetic facilities were even less adequate than on the Cassino front, while conditions of operation rendered improvisation more difficult.[17]

The general practice at Anzio was to centralize the dental service of each division at the division level, leaving only one dental officer in each regiment to function outside the division clinic. The 95th Evacuation Hospital carried a dental clinic that began functioning on D plus 2 as a corps installation. The corps clinic shifted to the 33d Field Hospital when the 95th Evacuation was withdrawn from the beachhead.

A prosthetic dental team of the 2d Auxiliary Surgical Group was attached to the 56th Evacuation Hospital on 22 February, after heavy casualties in the German counteroffensive had revealed the need for reparative dental work on the beachhead. The team moved to the 38th Evacuation when that unit replaced the 56th early in April, remaining at Anzio until the end of that month. During the period 22 February–30 April this team completed 37 full dentures, 112 partial dentures, and 2 inlays, while repairing 20 dentures and 3 bridges. No dental laboratory facilities other than those normally carried by the divisions were available.

Nursing Service

The Anzio beachhead nursing service contributed one of the great heroic achievements of the war. As in other amphibious operations, nurses were not scheduled for the landings, but joined their units when hospitals were established. Thereafter they shared all the discomfort and inconvenience, all the personal hazard, and all the unceasing labors of the men. If there was any distinction at Anzio between combat troops and medical personnel, it was that the latter worked harder and took greater risks. They had not even the scant protection of a foxhole, and the red cross was a target rather than a shield. There were, moreover, no lulls or quiet periods in their activities. Through it all, the approximately 200 nurses on the beachhead carried on their normal duties, without rest and without complaint.

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[17] Sources for this section are: (1) MS, Hist of Army Dental Corps, MTO, Jan 43–Jun 44; (2) Annual Rpt, Surg, Fifth Army, 1944; (3) Annual Rpts, 1944 of med units mentioned in the text of this chapter.

When the German drive of February was in full swing, and conditions on the beachhead were at their worst, the evacuation of the nurses was considered, but only briefly. As a morale factor, their presence was of incalculable value. To remove them would have been very close to an admission of defeat in the eyes of the combat troops. So they remained—six of them never to depart. Among those who survived, four wore the Silver Star, the first women ever to receive that decoration.

CHAPTER VIII

From the Garigliano to the Arno

Preparations for the Offensive

The Strategic Concept

After the failure to crack the Gustav Line in mid-March 1944, General Alexander revised his strategy for the whole campaign. Plans for the spring offensive contemplated combining another and still heavier frontal assault with a double flanking movement from the left. II Corps was to move up the coast, along the axis of Highway 7, while the French Expeditionary Corps predominantly skilled in mountain fighting, was to attack through the lightly held ridges that formed the southern wall of the Liri Valley. Simultaneously, the British Eighth Army was to renew the assault on Cassino, while VI Corps, at Anzio, was to be ready at the strategic moment to cut Highway 6 at Valmontone. If the movement succeeded, an entire German army would be trapped and destroyed.[1]

The plan of attack called for a high degree of co-ordination and involved logistical problems of great difficulty, especially in the sector assigned to the French. It was necessary, moreover, to regroup the Allied forces all along the line before the offensive could be mounted, and to do it without giving the enemy any hint of the nature of the forthcoming operation.

Under orders issued on 5 March, the British 10 Corps in the Minturno sector was quietly relieved by the U.S. 88th Infantry Division, newly arrived from Africa where it had completed its training. The British 5th Division from 10 Corps and the U.S. 34th Division from II Corps went to Anzio in March, while the 36th went into training for a later role with the beachhead forces or for new action on the southern front. The French Expeditionary Corps, reinforced by the arrival of the 4th Moroccan Mountain Division, sideslipped to positions on the right of the 88th, while Eighth Army, leaving only one corps of two divisions to hold the Adriatic front, took over the Cassino sector. Moving in small groups at night to camouflaged positions, the reshuffling was not complete until April.

By that time the 85th Infantry Division, fresh from the United States, had joined the 88th on the lower Garigliano. These new American divisions were accompanied by their organic medical battalions, the 310th with the 85th Division and the 313th with the 88th. Both divisions were attached to II Corps, which had been weakened by loss of the 34th and 36th. When the British 56th

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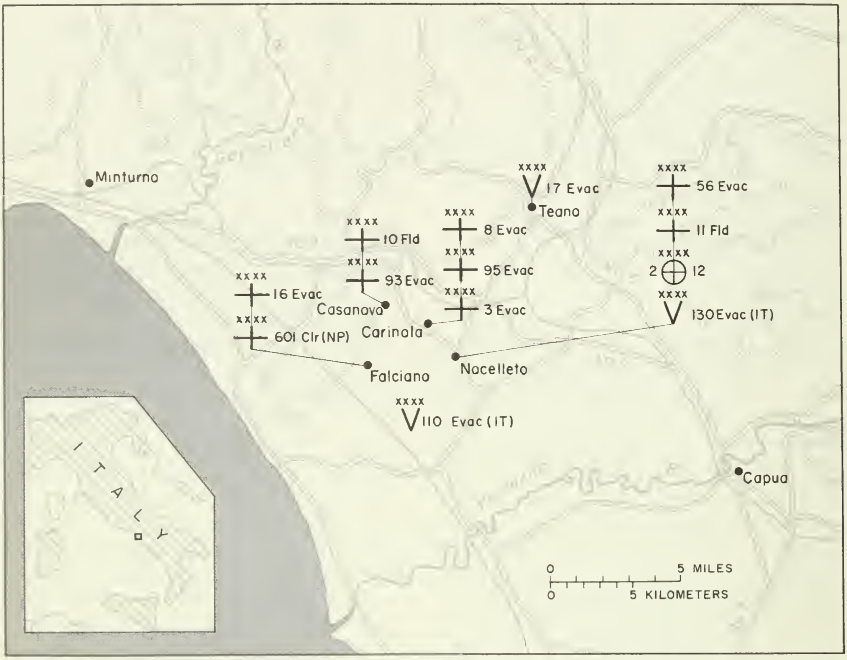
[1] (1) *Fifth Army History,* pt. V, *The Drive to Rome* (Milan Italy: Pizzi and Pizio, 1945). (2) Alexander of Tunis, "The Allied Armies in Italy from 3rd September, 1943, to 12th December, 1944," Suppl to the *London Gazette,* 6 June 1950, pp. 2918–40. (3) Kesselring, *Soldier's Record.*


Minturno
XXXX
16 Evac
XXXX
601 Clr (NP)
XXXX
10 Fld
XXXX
93 Evac
Casanova
XXXX
8 Evac
XXXX
95 Evac
XXXX
3 Evac
Carinola
XXXX
17 Evac
Teano
XXXX
56 Evac
XXXX
11 Fld
XXXX
2
12
XXXX
130 Evac (IT)
Falciano
Nocelleto
XXXX
110 Evac (IT)
Capua
ITALY
0
5 MILES
0
5 KILOMETERS

Map 25—Fifth Army Hospitals and Medical Supply Dumps on the Cassino Front, 11 May 1944

Division returned from Anzio it was assigned to Eighth Army. The remaining 10 Corps division, the 46th, was sent to the Middle East, but returned to Italy later in the year as an Eighth Army unit.

Regrouping of Medical Installations

The realignment of the Allied Armies in Italy, as the former 15th Army Group was now called, made Highway 6 the main artery of support for Eighth Army, while II Corps was served by Highway 7 along the coast. U.S. medical installations were accordingly moved to positions in the new Fifth Army area as rapidly as they could be cleared, with due regard to deception of the enemy in the process. (*Map 25*) Patients were evacuated to base hospitals in the Caserta area, the Naples hospitals being largely reserved for Anzio casualties and those from the French Expeditionary Corps.[2]

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[2] Major sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1944; (2) Annual Rpt, Surg, II Corps, 1944; (3) Unit rpts of med units mentioned in the text.

In the new sector, all Fifth Army hospitals were grouped in the vicinity of Carinola, adjacent both to Highway 7 and to the railroad that roughly paralleled that highway all the way to Rome. The area was about 12 miles east of the mouth of the Garigliano and no more than 10 or 15 miles southwest of the Teano-Riardo area from which most of the installations came. The 11th Evacuation Hospital opened at the new site on 11 March, followed two days later by the 95th. The 8th Evacuation Hospital and the neuropsychiatric hospital operated by the 601st Clearing Company were ready to receive patients in the Carinola area on 23 March, and the 38th Evacuation completed its move on the 29th. The 10th Field Hospital, the 16th Evacuation, and the 3d Convalescent opened in the Carinola area on the 3d, 16th, and 26th of April, respectively.

The 38th Evacuation had changed places with the 56th from Anzio, and the 11th had rotated with the 93d before all these moves were completed. The 94th Evacuation Hospital went direct to Anzio from its Mignano site late in March. The venereal disease hospital operated by the 602d Clearing Company closed at Riardo on 27 March and went into bivouac. Its place was taken by a temporary venereal disease hospital set up under II Corps control by the clearing company of the 54th Medical Battalion. The hospitalization units of the 11th Field Hospital were brought together late in February, operating under canvas as a provisional 400-bed station hospital for troops in training until early April. The 11th Field then went into direct support of the clearing stations of the 310th and 313th Medical Battalions.

Veterinary units serving Fifth Army were also moved during March in the same general pattern. The two Italian-staffed veterinary hospitals were established in the II Corps area, the 110th on the extreme left and the 130th at Nocelleto close to the main concentration of medical units. The first U.S. veterinary installation to reach the theater, the 17th Veterinary Evacuation Hospital, arrived during the regrouping and was established near Teano, on the extreme right of Fifth Army.

For some six weeks before the launching of the drive on Rome, set for 11 May 1944, Fifth Army medical units on the southern front had only routine functions to perform. Hospitals brought their equipment up to standard and replaced losses, while combat medical personnel trained with their divisions. Emphasis was placed on physical conditioning and on evacuation in mountainous terrain, but opportunities for recreation were provided.[3]

Combat Medical Service

The Drive to Rome

The Southern Front—An hour before midnight, 11 May 1944, Allied guns pounded German positions from the Tyrrhenian Sea to Cassino and beyond. Immediately thereafter the 85th and 88th Divisions of II Corps, and the French Expeditionary Corps on their right, attacked through the mountains north and west of Minturno. In the center of the front, the British 13 Corps of Eighth Army forced a crossing of the Rapido where the 36th Division had suffered disaster in January; on the right the Polish Corps stormed Cassino and Monastery Hill. Though taken by surprise, the Germans rallied quickly to fight back with their customary stubbornness and skill; but this time the Allies were not to be stopped, and the monastery was taken on the 18th.[4]

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[3] The malaria control program carried out at this time has been discussed on pages 259–61, above.

While the Germans were still off balance from the punishing blows of Allied artillery, the French corps stormed the heights where the British had failed in January and within twenty-four hours had broken through the Gustav Line. Against stiffening but disorganized opposition, Algerian and Moroccan mountain troops then followed the ridges that overlooked the Liri Valley from the south, and by 19 May had outflanked the Montedoro anchor point of the still unfinished Hitler line, last of the German fortified positions on the southern front.

Between the French colonials and the sea, the 88th and 85th Divisions of II Corps also penetrated the mountains and, in a series of bitterly contested small unit actions, broke through the enemy's prepared defenses. On 19 May the important highway junction of Itri fell to II Corps. Fondi was taken the next day, and the corps turned southwest toward Terracina, from which Highway 7 ran straight across the Pontine Marshes to Cisterna, the Alban Hills, and Rome.

On the Eighth Army front, where the strongest German defenses were concentrated, the advance was slower and more difficult, but the threat posed by Fifth Army on the left flank relieved enough of the pressure along Highway 6 to keep Eighth Army moving through the Liri Valley proper and on into the Sacco Valley beyond.

While II Corps drove through another mountain mass toward Terracina and the FEC stormed Pico, an important road junction which the enemy could not afford to lose, VI Corps at Anzio struck on 23 May toward Valmontone, where Highway 6 could be cut, the Sacco Valley blocked, and the whole German *Tenth Army* trapped.

In the rugged, mountainous area south of the Liri and Sacco Rivers, medical support was difficult in the extreme. Medical supplies and equipment were carried forward by jeep, by mule, by hand carry, and in a few instances were dropped by parachute from small planes. Jeeps and mules were also used to evacuate the wounded, supplementing the inadequate number of ambulances and trucks whose usefulness was restricted by the severe limitations of the road network. In some instances it was found advantageous to hold casualties at the aid stations until the advancing troops had secured neighboring roads in order to avoid the long and difficult litter hauls.

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[4] On the military side, major sources for this section are: (1) *Fifth Army History*, pt. V; (2) Alexander, "Allied Armies in Italy from 3rd September, 1943, to 12th December, 1944," Suppl to the *London Gazette*, 6 June 1950; (3) Opns Rpt, II Corps, May 1944; (4) Clark, *Calculated Risk*; (5) Starr, ed., *From Salerno to the Alps;* (6) Paul L. Schultz, *The 85th Infantry Division in World War II* (Washington: Infantry Journal Press, 1949); (7) John P. Delaney, *The Blue Devils in Italy: A History of the 88th Infantry Division in World War II* (Washington: Infantry Journal Press, 1947). Medical sources primarily relied upon are: (8) Annual Rpt, Surg, Fifth Army, 1944; (9) Annual Rpt, Surg, II Corps, 1944; (10) Annual Rpt, Surg, 85th Div, 1944; (11) Annual Rpt, Surg, 88th Div. 1944; (12) Opns Rpt, 310th Med Bn, May 1944; (13) Opns Rpt, 313th Med Bn, May 1944; (14) Hist Rcd, 54th Med Bn, May 1944. See also (15) Ltr, Austin W. Bennett, M.D., to Col Coates, 17 Nov 58; (16) Ltr, Maurice M. Kane, M.D., to Coates, 11 Nov 58, both commenting on preliminary draft of this volume. Colonel Bennett was at that time commanding officer of the 33d Field Hospital; Colonel Kane was surgeon of the 88th Division.

As in the mountain fighting before Cassino, the heaviest burden fell on the litter bearers. The medical battalions organic to the 85th and 88th Divisions—the 310th and 313th, respectively—had each received its authorized overstrength of 100 litter bearers[5] before the drive began, but the number available was still far short of needs, and both II Corps divisions drew heavily upon service and headquarters troops for additional bearers. Italian troops were also attached as litter bearers. All together the 85th Division had 700 litter bearers above the normal Table of Organization allotment, and the 88th had almost as many.

TREATING 88TH DIVISION CASUALTY *at a forward aid station, May 1944.*

The 85th Division, on the left flank of II Corps, left its clearing station and the 1st platoon of the 11th Field Hospital in the vicinity of Cellole some five miles southeast of the Garigliano crossing. Casualties began coming back about an hour after the division went into action, and reached a record 544 during the 24 hours of 12 May. On the second day of the drive, with admissions to the clearing station again exceeding 500, the 3d Platoon of the 11th Field Hospital joined the 1st in support of the 85th Division. Collecting companies operated in two sections in order to give closer support to the combat forces. All ambulances organic to the division were in use forward of the clearing station, together with additional ambulances borrowed from corps. Jeeps fitted with litter racks were invaluable. Through 14 May weapons carriers and trucks were used to bring out the walking wounded. Evacuation from the clearing station and field hospital was by two platoons of the 54th Medical Battalion.

The offensive was in its sixth day before the 85th Division had moved far enough forward to permit the clearing station to advance, but thereafter for the next ten days its moves were frequent. On 17 May the station crossed the Garigliano River to the vicinity of Minturno, leaving one platoon of the field hospital at the old site to care for patients not yet in condition to be evacuated. The other field hospital platoon similarly remained at Minturno, while the clearing station moved forward to Formia on 20 May and to a site near Itri on the 21st. On 24 May the clearing station was established five miles west of Fondi, with both field hospital platoons adjacent. Two days later the clearing

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[5] See p. 240, above.

Italian Civilians Help Carry a Casualty *down a mountain near Terracina.*

station again advanced without its field hospital support, this time to Sonnino, where it operated until the division was withdrawn from the line on 27 May.

The 88th Division, on the right of the 85th with the French Expeditionary Corps on its own right, followed a line of advance parallel to that of the 85th but somewhat farther to the north. Highway 7 was the initial axis of both divisions, and was consequently the line along which medical installations of both tended to be located. The starting site of the 88th Division clearing station was in the vicinity of Fasani, just north of the highway and some three or four miles east of the Garigliano.

Although casualties were not as heavy as those of the 85th, 369 passed through the clearing station of the 88th Division on 12 May. The station had crossed the river to a site a mile southeast of Minturno before it was given field hospital support on 16 May. At that time the 2d Platoon of the 11th Field Hospital moved into the area. Evacuation from the clearing station was by an ambulance platoon of the 54th Medical Battalion.

Once the Gustav Line was broken, the

campaign moved more rapidly. The 88th Division clearing station shifted to Formia on the Gulf of Gaeta on 20 May and the next day to a site just west of Itri. In each move the field hospital platoon lagged behind for a day or two until its nontransportable patients could be transferred to one of the evacuation hospitals behind the lines.

At this point the 88th Division moved into the mountains north of Highway 7, and evacuation became increasingly difficult. Collecting companies were split to establish treatment stations along litter trails, and Italian troops were attached as litter bearers. Two collecting stations were in the vicinity of Fondi when that town was bombed the night of 23–24 May and suffered considerable damage to their vehicles.

Over the next three days, the division cut across roadless mountains to Priverno. In this drive litter carries were up to twelve miles from the moving front back to Fondi, with as many as fourteen relay posts along a single trail.

It was the last important action on the southern front. Once II Corps was in contact with the Anzio forces, German resistance south of the Liri and Sacco Valleys collapsed. On the 88th Division front, the entire 313th Medical Battalion moved to the vicinity of Sonnino on 25 May, and two days later the clearing station, with its attached field hospital unit, was set up just outside Priverno.

The French Expeditionary Corps, on the II Corps right, had the most difficult mission of any Fifth Army formation in the drive to Rome and suffered casualties commensurate with its success. The French medical units supporting the corps, though adequate for normal operations, were unable to carry the exceptional load required, and on 23 May the 403d Medical Collecting Company, 161st Medical Battalion, with elements of the 551st Ambulance Company attached, was sent to reinforce the FEC. The next day the 406th Medical Collecting Company, 162d Medical Battalion, was given the mission of evacuating French forward hospitals.

The Anzio Front—The Germans were retreating hastily from Terracina when VI Corps, now more than seven divisions strong, began its drive on 23 May from Anzio beachhead. The 1st Armored, the 3d Division, and the 1st Special Service Force led off, passing through the 34th to take the Germans by surprise. The attacking forces quickly penetrated enemy positions before the Germans could regroup. The 45th struck for limited objectives on the left of the salient, while the British 1st and 5th Divisions held defensively from the Albano road west to the sea, and the U.S. 36th remained in reserve.[6]

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[6] Principal military sources for this section are: (1) *Fifth Army History*, pt. V; (2) Alexander, "Allied Armies in Italy from 3rd September, 1943, to 12th December, 1944" Suppl to the *London Gazette*, 6 June 1950; (3) Opns Rpts, VI Corps, May, Jun 44; (4) Opns Rpts, II Corps, May, Jun 44; (5) Clark, *Calculated Risk*, pp. 334–88; (6) Truscott, *Command Missions*, pp. 369–80; (7) Starr, ed., *From Salerno to the Alps*, pp. 228–67; (8) Taggart, ed., *History of the Third Infantry Division in World War II* pp. 153–96; (9) Huff, ed., *The Fighting 36th*, unpaged; (10) *The Fighting Forty-Fifth*, pp. 86–92; (11) Howe, *1st Armored Division*, pp. 317–68; (12) Schultz, *85th Division*, pp. 60–107; (13) Delaney, *Blue Devils*, pp. 62–124. On the medical side, sources primarily relied upon are: (14) Annual Rpt, Surg, Fifth Army, 1944; (15) Annual Rpt, Surg, VI Corps, 1944; (16) Annual Rpt, Surg, II Corps, 1944; (17) Annual Rpts, Surgs, 3d, 34th, 36th, 45th, 85th, 88th, 1st Armd Divs, 1944; (18) Opns Rpts, 3d, 109th, 111th, 120th, 310th, 313th, 47th Armd Med Bns, May, Jun 44.

In two days of violent action, the 3d Division once more proved its right to the name the Germans gave it of *Sturmdivision*. The 7th Infantry took Cisterna, fighting from house to battered house. The 15th and 30th regiments bypassed the town on either side and converged on Cori, six miles nearer to Highway 6. In the same two days the Special Service Force seized the dominating height of Mt. Arrestino, southeast of Cori, and columns of the 1st Armored were threatening Velletri, key to the Alban Hills and center of German resistance, from south and east. Contact had been made with II Corps patrols on Highway 7; the Twelfth Air Force, in close support, had destroyed hundreds of German vehicles on the crowded escape roads from the beachhead; and VI Corps had taken more than 2,600 prisoners.

On 26 May a sudden change of direction again caught the Germans unprepared. The 34th and 45th Divisions lunged west toward Campoleone Station and Lanuvio, while the 3d held its gains. The 1st Armored, after a final thrust toward Velletri in terrain too rough for tanks, was relieved by the 36th. The 1st Armored was back in the line in the Campoleone sector on 29 May, but the Germans, holding fanatically along the Albano-Lanuvio-Velletri railroad, gave ground only by inches.

Meanwhile, the U.S. IV Corps headquarters under Maj. Gen. Willis D. Crittenberger had relieved II Corps headquarters on the southern front on 28 May, and II Corps had shifted to the beachhead, where General Keyes took command of the Valmontone sector. The 3d Division and the Special Service Force passed to II Corps command at this time. The 85th Division, coming up from Terracina to reinforce the 3d, went into the line the evening of 30 May, and the 88th Division was on the way.

The final drive to Rome was launched on 1 June, when Valmontone fell to the 3d Division and Highway 6 was finally cut. The bulk of the German forces, however, had escaped from the Sacco Valley before the trap could be sprung, leaving II Corps to pursue a beaten but still dangerous enemy. At the same time elements of the 36th Division, on a mission in the rough and wooded area north of Velletri, penetrated the eastern slopes of the Alban Hills without encountering any resistance. Seizing the opportunity, the division shifted its ground and by evening of 1 June held commanding positions on the heights above Velletri that made the German position in the town no longer tenable.

Indeed, the Germans were already withdrawing, and only mopping up remained. Small, highly mobile units from II Corps on Highway 6 and from VI Corps on Highway 7, swept into Rome on 4 June, so close behind the retreating enemy that he had no time to destroy the bridges across the Tiber. Highway 6 had not been cut quickly enough to prevent the escape of the bulk of the German forces, but enemy losses in both men and material had been heavy.

The character of medical support on the Anzio front differed markedly from that dictated by the mountainous terrain west of the Garigliano. During the first few days of the VI Corps offensive, clearing companies remained in the hospital area east of Nettuno. The 3d Division clearing station, supporting both its own division and the Special Service Force,

Half-Track Ambulance in the Breakout From Anzio

was the first to move, setting up south of Cori on 26 May along with a platoon of the 33d Field Hospital.

One platoon of the 36th Division clearing company went into action with the division on 26 May, north of Cisterna, but did not have a platoon of the 33d Field Hospital adjacent until the 28th. Both clearing station and field hospital moved to the Velletri area on 3 June. The field hospital platoon supporting the 3d Division moved over to support the clearing station of the 45th after II Corps took command of the Valmontone sector. The remaining unit of the 33d Field Hospital was established near the 34th Division clearing station south of Velletri by 30 May.

In the new II Corps sector, the 10th Field Hospital relieved the 11th on 29 May, units of the 10th Field being attached to the clearing stations of the 3d, 85th, and 88th Divisions. The unit attached to the 3d Division was forced to withdraw from its initial site south of Valmontone by enemy shelling on 29 May. The clearing station of the 88th Division in the same general area was

A Newly Taken German Prisoner Helps Give First Aid *to a 3d division casualty in the Cisterna area.*

bombed on the night of 1–2 June. A direct hit on the admissions tent killed nine persons, seven of them personnel of the 313th Medical Battalion. For the next twenty-four hours 88th Division casualties were taken to the 85th Division clearing station west of Valmontone on the rim of the Alban Hills.

By this time the combat troops were moving rapidly, and evacuation routes between collecting and clearing stations were lengthening. This was especially true of the 1st Armored Division, where treatment stations set up 2 or 3 miles to the rear might be 10 miles behind in a few hours. Both the 52d Medical Battalion, supporting VI Corps, and the 54th Medical Battalion, supporting II Corps, were called upon to reinforce the division collecting companies in the final drive to Rome. On the II Corps front, along Highway 6, clearing stations moved almost daily.

Litter carries in the same period were long, as the troops outran their medical support. The indispensable jeep, fitted with litter racks, was used in many places inaccessible to ambulances, but even jeeps were useless in much of the hill country on the 36th Division front.

Casualties were heaviest in the first two days of the drive out of the beachhead and on 1 June, when the Germans made their final effort to hold open their line of retreat along Highway 6. Field hospital units often operated beyond normal capacity and were frequently unable to evacuate their patients in time to move with the division clearing stations. Holding sections were usually left behind on these occasions, permitting the main body of the unit to advance. In other instances, it was necessary for one field hospital unit to support two divisions. Additional nurses for the field hospitals were supplied by Fifth Army, while other personnel and extra equipment were borrowed from nonoperational units. On 2 June the 1st Platoon of the 11th Field Hospital was attached to the 10th Field in the II Corps sector to help carry the load.

Pursuit to the Arno

After the fall of Rome, the German armies in Italy might have been destroyed had Alexander been allowed to retain adequate forces. The Combined Chiefs of Staff, however, gave higher priority to the expanding operations in France. During June and July General Clark reluctantly gave up both VI Corps and the French Expeditionary Corps to Seventh Army for the invasion of southern France. The equivalent of more than eight veteran divisions, with supporting units, were withdrawn while Fifth Army was in pursuit of a badly beaten foe. In addition to the medical units organic to these divisions, Fifth Army also lost the 52d and 56th Medical Battalions, the 10th and 11th Field Hospitals, and the 11th, 93d, and 95th Evacuation Hospitals. At the same time the 750-bed 9th and 59th Evacuation Hospitals were withdrawn from the Peninsular Base Section.[7]

The combat-hardened units of the VI Corps and the FEC were gone, and in their place were the untested 91st and 92d Divisions and the Brazilian Expeditionary Force of somewhat more than division strength. Of these only the 91st saw action before the Arno River line was reached. In effective strength, Fifth Army numbered 379,588 on 4 June, when Rome was taken, and only 171,026 on 15 August when the lines were stabilized.

After the fall of Rome the Germans fought only small rear-guard actions, trading ground for time to regroup and reequip their disorganized and decimated forces. Bridges, culverts, port facilities were methodically destroyed wher-

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[7] Principal sources for military operations in the pursuit to the Arno are: (1) *Fifth Army History*, pt. VI, *Pursuit to the Arno* (Milan, Italy: Pizzi and Pizio, 1945) ; (2) Alexander, "Allied Armies in Italy from 3rd September to 12th December, 1944, Suppl to the *London Gazette* 6 June 1950;" (3) Opns Rpts, II Corps, Jun–Aug 44; (4) Opns Rpts, IV Corps, Jun–Aug 44; (5) Clark, *Calculated Risk*, pp. 334–88; (6) Starr, ed., *From Salerno to the Alps*, pp. 268–300; (7) Howe, *1st Armored Division*, pp. 317–68; (8) Delaney, *Blue Devils*, pp. 62–124; (9) Maj. Robert A. Robbins, *The 91st Infantry Division in World War II* (Washington: Infantry Journal Press, 1947) , pp. 26–91. The more important medical sources are: (10) Annual Rpt, Surg, Fifth Army, 1944; (11) Annual Rpt, Surg, II Corps, 1944; (12) Annual Rpt, Surg, IV Corps, 1944; (13) Annual Rpts, Surgs, 34th, 88th, 91st, 1st Armd Divs, 1944; (14) Opns Rpts, 109th Med Bn, Jun–Aug 44; (15) Opns Rpts, 313th Med Bn, Jun–Aug 44; (16) Opns Rpt, 111th Med Bn, Jun 44; (17) Opns Rpts, 316th Med Bn, Jul–Aug 44; (18) Opns Rpts, 47th Armd Med Bn, Jun–Aug 1944; (19) Hist, 54th Med Bn, Jun–Aug 44; (20) Annual Rpt, 161st Med Bn, 1944.

Wheeled Litter in the Flat Beachhead Area

ever their destruction would impede the Allied advance or delay the delivery of supplies. Battles were fought on terrain of the enemy's choosing by mobile units that could disengage at will and outrun the slower Allied formations. Fifth Army, forced like the Germans to reorganize on the march, never quite caught up with any substantial body of enemy troops.

The pursuit opened on 6 June, the day Allied forces crossed the English Channel and secured the first beachhead on French soil. VI Corps, in the coastal sector, drove out along Highway 1 toward Civitavecchia, the largest port between Naples and Leghorn and urgently needed to shorten supply lines. The 1st Armored led the advance in two columns, the 34th and 36th Divisions following as closely as their transportation permitted. Elements of the 34th passed through the armor that night and took the city after only a token fire fight on the morning of 7 June. Within a week the port had been restored sufficiently to dock Liberty ships.

Some twenty miles inland, II Corps, with the 85th and 88th Divisions, struck along Highway 2 toward Viterbo with its important complex of airfields. The

GIVING PLASMA *to a 1st Special Service Force soldier while he is being evacuated by jeep to a collecting station.*

infantry was outdistanced by a task force of the 1st Armored that swung inland after the capture of Civitavecchia and secured Viterbo the morning of 9 June.

By this time the pattern of the campaign was well defined. The hit-and-run tactics of the German retreat did not call for pursuit in force, permitting both the reduction and the reoganization of Fifth Army to be carried out in orderly fashion without loss of momentum. The 3d Division, which garrisoned Rome until 14 June, did not go back into the line, and the 45th, in VI Corps reserve, was withdrawn on 8 June. The French Expeditionary Corps, which had been pinched out in the final days of the drive to Rome, began relief of II Corps along the Highway 2 axis on 9 June, and both the 85th and 88th Divisions were withdrawn for needed rest. At the same time the VI Corps sector was narrowed and left in sole command of the 36th Division, with the 361st RCT of the 91st Division attached, while the 34th and 1st Armored rested. On 11 June General Crittenberger's IV Corps relieved VI Corps.

The reinforced 36th Division seized the town of Grosseto on 15 June, and crossed the Ombrone River that night. Two days later the 517th Parachute Combat Team, in Italy to gain experience for a mission in southern France, was also attached to the 36th. The advance, however, was slowing down in the face of stiffening opposition and more difficult terrain. In the French sector, the fighting centered around Lake Trasimeno was becoming particularly bitter.

To relieve the French and prepare for the first withdrawals from the FEC, the IV Corps sector was widened, and the 1st Armored returned to the line on 21 June. Five days later the 34th Division, with the 442d Infantry attached, relieved the 36th, which went at once to the Seventh Army staging area. The 361st Infantry remained in the line, attached to the 1st Armored, but the 517th was withdrawn on the 28th.

The 34th Division took command of the coastal sector just north of Piombino, the small but immensely useful port that had fallen on 25 June. The division closed rapidly toward Highway 68, a lateral road that runs roughly east from a point on Highway 1 some twenty miles south of Leghorn to a junction with Highway 2 at Poggibonsi, a similar distance south of Florence. The Germans fought hard at Cecina just below the junction of Highways 1 and 68, in an effort to delay the capture of Leghorn as long as possible, but the 34th was beyond the intersection by 2 July. The next day the 363d Infantry of the 91st Division was attached to the 34th, in time to take part in a 6-day battle for Rosignano, only a dozen miles southeast of Leghorn.

On 11 July the 88th Division came back into the line as a IV Corps unit, relieving the 1st Armored, and the following day the 91st was committed as a division, though its 363d Regiment remained for the time being attached to the 34th. IV Corps reached the Arno plain on 17 July, and two days later the 34th Division entered the battered port of Leghorn. Pisa fell on the 23d, and Fifth Army moved up to the Arno on its entire front.

The last of the French units had been withdrawn on 22 July, and Eighth Army had shifted west to fill the gap. Florence fell to Eighth Army on 4 August. By the 15th of that month the Arno River line was secure, and the Adriatic coast was also in Allied hands as far north as the Metauro River above Senigallia. The weakening of Fifth Army to supply troops for operations in southern France, however, had permitted the enemy to withdraw to the Gothic Line in the northern Apennines. Pursuit beyond the Arno was impossible without rest, regrouping, and resupply. The enemy would also have time to recover his strength and to improve his fortified positions.

On the rolling plains northwest of Rome, clearing stations and their accompanying field hospital platoons experienced great difficulty in keeping up with the racing troops. Advances during the first few days of the pursuit were as much as twenty and thirty miles a day, so that a clearing station located within range of enemy guns in the morning might be miles behind by nightfall. Even with frequent moves it was impossible to avoid long ambulance runs. For similar reasons, litter hauls too became long as combat elements outran ambulance control points and even aid stations.

Field hospital platoons found it impossible to move with the same frequency as the clearing stations they supported, because of the need for giving postoperative care to their patients, and of the inadequacy of their organic transportation. The field hospitals were given six additional 2½-ton trucks in June, making ten in all, but even this number was sufficient to move only one platoon at a time. The problem of caring for patients who could not be moved was solved only by attaching additional field hospital units and by operating the units in two sections. On more than one occasion a single field hospital had seven separate sections in simultaneous operation, all in support of a single division clearing station.

The 10th Field Hospital remained in the line in support of the 85th and 88th Divisions until the relief of II Corps was completed on 11 June. At that time the 11th Field was brought up from bivouac in the Cisterna area, going into action with IV Corps. Platoons of the 33d Field Hospital followed the VI Corps drive to Civitavecchia, shifting to IV Corps when VI Corps was relieved. For the 33d, work was light until the end of June, when the 11th was withdrawn to stage for the invasion of southern France. Thereafter the 33d carried the entire burden of forward surgery for IV Corps, including the relatively heavy casualties from the battles for Cecina and Rosignano.

The pursuit was characterized by alternating periods of heavy fighting and comparative lull, with corresponding peaks and valleys for the medical service. On various occasions, corps medical battalions were compelled to fill in at the division and regimental levels. During the period of severe fighting in the mountainous area around Cecina early in July, and the subsequent advance to Leghorn and Pisa, the clearing station of the 109th Medical Battalion, supporting the 34th Division, cleared casualties from five regimental combat teams and their attached troops.

The 316th Medical Battalion, organic to the 91st Division, operated as a unit in combat for the first time when the division was committed on 12 July, although collecting companies of the battalion had been in action with the 361st and 363d RCT's.

On 3 August, with all but mopping up operations completed, a rest center for Fifth Army medical personnel was established at Castiglioncello, about fifteen miles south of Leghorn on the coast. The camp had accommodations for 50 officers, 25 nurses, and 100 enlisted men. Each group remained four days.

Hospitalization in the Army Area

The long period of preparation for the May drive on Rome gave ample time to clear Fifth Army hospitals, but the nature of the terrain on the Garigliano front, together with the rapid movement of the combat troops once the Gustav Line was broken, prevented close support. Hospitals remained in the Carinola area until late May, while lines of evacuation stretched out to fifty and seventy-five miles along Highway 7.[8]

Hospitals supporting II Corps began moving forward after the capture of Terracina. The 95th Evacuation, augmented by the 1st Platoon of the 601st Clearing Company, opened at Itri on 24 May, and the 93d leapfrogged ten miles farther forward, to Fondi, two days later. The 750-bed 56th Evacuation took over from the 93d at Fondi on 1 June, the 93d going to Campomorto in the Anzio area. At the same time the 95th jumped ahead fifty miles to Cori, southeast of the Alban Hills. The 16th Evacuation, meanwhile, had gone by sea to Anzio where it opened on 27 May; and the 8th, after a brief stay at Cellole, between Carinola and Minturno, moved overland to Le Ferriere in the beachhead sector, opening on 1 June. The neuropsychiatric hospital operated by the 601st Clearing Company, and the venereal disease hospital operated by the 602d Clearing Company, both moved into the Anzio area on 31 May.

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[8] Major sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1944; (2) Unit Rpts of the hosps mentioned in the text.

Two casualty clearing stations (evacuation hospitals), two field hospitals, three mobile surgical formations, and a mobile surgical group attached to the French Expeditionary Corps were similarly slow in moving up for reasons of terrain and because of the rapid movement of the corps. Additional French hospital units, although requested early in April, were not available in time for the Rome-Arno Campaign.[9]

As the hospitals moved forward, ambulance control posts were set up to direct the flow of casualties. Movement was facilitated by keeping new casualties out of hospitals scheduled for an early change of location.

General Martin was with the first group to enter Rome, where he quickly located buildings suitable for hospital use. The 94th Evacuation from Anzio and the 56th from Fondi both moved into Rome on 6 June, with the 38th and 15th from Anzio following on 9 and 10 June, respectively. The 38th exchanged its dug-in ward tents with the 59th Evacuation Hospital, newly arrived from Sicily to act as a Peninsular Base Section station hospital at Anzio. (*Map 26*)

In Rome, the 38th Evacuation set up under canvas in a park near Vatican City. The 15th was located in a school building, while the 94th and 56th shared a large building originally constructed for hospital use by one of the religious orders and recently operated as a military hospital by the Germans—so recently, in fact, that pots of coffee and vats of beans were still warm in the kitchen when the Americans arrived. Although it was recognized that these evacuation hospitals did not have the organic personnel necessary for cleaning and maintenance of fixed structures, General Martin felt that the service they would render in preparing the buildings for later occupancy by PBS units would more than outweigh the disadvantages.[10]

The last of the Fifth Army hospitals from the southern front, the 3d Convalescent, moved into the Anzio area on 9 June, opening at Le Ferriere. Movement had been delayed by lack of transportation and congested roads.

In the pursuit north of Rome, where the terrain was well adapted to the use of armor, the combat troops quickly outdistanced their supporting hospitals, and lines of evacuation once more lengthened out, up to 100 miles. Here the main axis of advance for the U.S. forces was Highway 1, along the Mediterranean coast, with the French Expeditionary Corps, supported in part by American medical units, using Highway 2, farther inland. The first hospital to move into the new combat zone was the 11th Evacuation, which opened at Santa Marinella,

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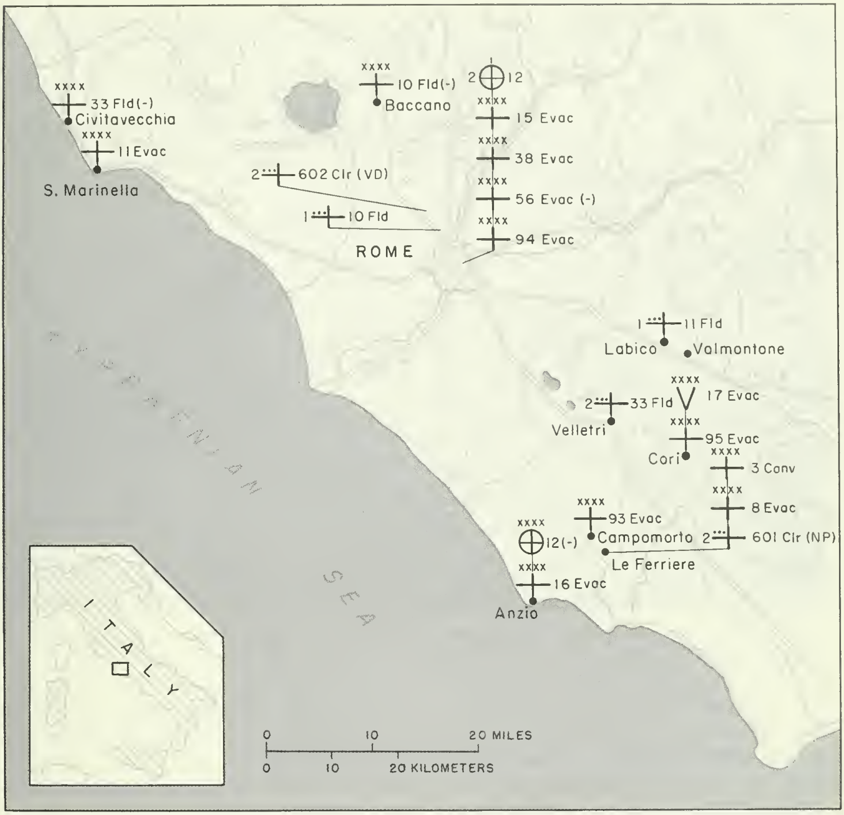
[9] (1) *Fifth Army History*, pt. V, p. 244. (2) Journal of Col Reeder.

[10] Annual Rpt, Surg, Fifth Army, 1944; p. 44.


XXXX
33 Fld(-)
Civitavecchia
XXXX
11 Evac
S. Marinella
XXXX
10 Fld(-)
Baccano
2
12
XXXX
15 Evac
XXXX
38 Evac
XXXX
56 Evac (-)
XXXX
94 Evac
2
602 Clr (VD)
1
10 Fld
ROME
1
11 Fld
Labico
Valmontone
XXXX
17 Evac
2
33 Fld
Velletri
XXXX
95 Evac
Cori
XXXX
3 Conv
XXXX
8 Evac
XXXX
93 Evac
Campomorto
2
601 Clr (NP)
Le Ferriere
XXXX
12(-)
XXXX
16 Evac
Anzio
TYRRHENIAN
SEA
ITALY
0
10
20 MILES
0
10
20 KILOMETERS

MAP 26—Fifth Army Hospitals and Medical Supply Dumps, 10 June 1944

just below Civitavecchia, on 10 June. The new location was 40 miles northwest of Rome and more than 80 miles from the hospital's former Anzio site. The following day the 93d opened at Tarquinia, some 15 miles farther north. On 13 June the 95th Evacuation was established at Montalto di Castro, 10 miles beyond Tarquinia, where it was joined by the 94th two days later. The 400-bed evacuation hospitals were usually moved in pairs, the organic transportation of the two units being pooled to move first one, and then the other.

Throughout this period, communication was poor and lines of evacuation were maintained only by great effort. The advance of the front was so rapid

INSTITUTE OF THE GOOD SHEPHERD IN ROME, *occupied jointly by the 38th and 94th Evacuation Hospitals.*

that the Signal Corps was unable to include the hospitals in its telephone network. Pigeons were used to some extent, but for the most part communication was maintained by couriers driving jeeps hundreds of miles a day. The 8th Evacuation Hospital, for example, sent an advance party to lay out a site near Orbetello, 20 miles beyond the 94th and 95th, on 16 June. The party was met by an ambulance driver who had already come 50 miles from the front in search of a hospital. The 8th's commander, Col. Lewis W. Kirkman, hastily changed plans and after making contact with the Fifth Army surgeon by courier, ordered the hospital established 4 miles south of Grosseto. The new site was only 6 miles from the point of contact with the enemy, but by the time the hospital was ready to receive patients the front was a safe distance away.

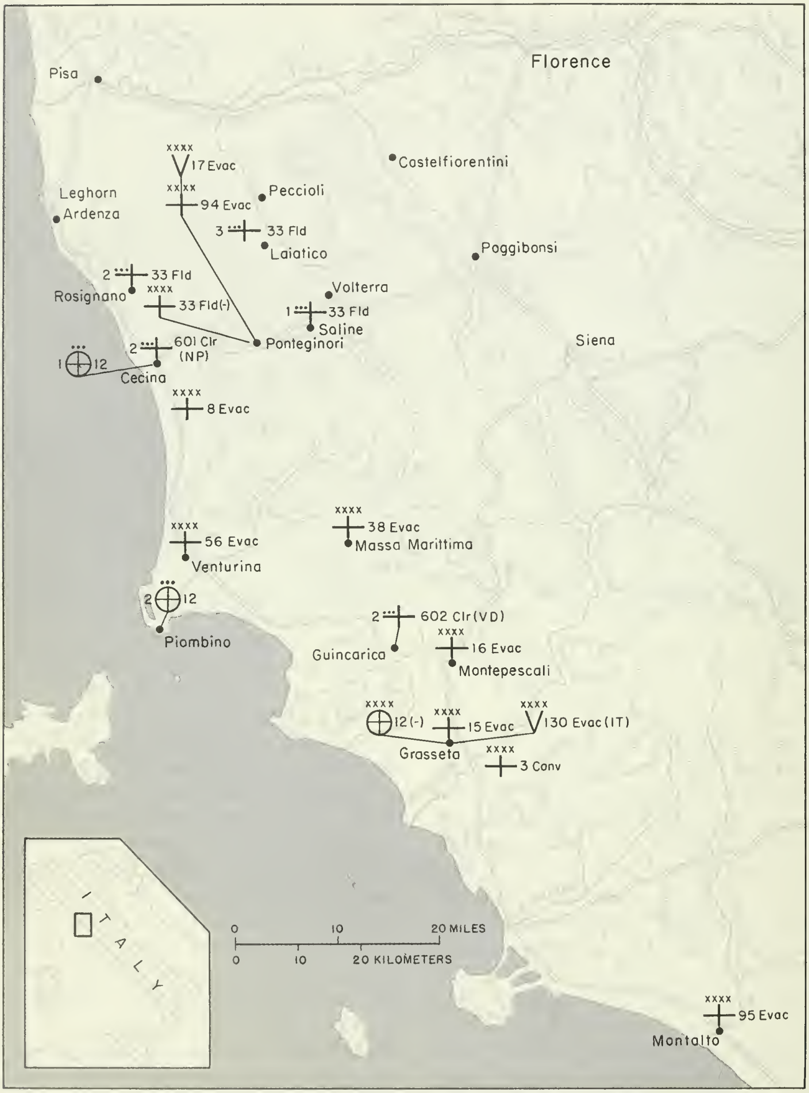
Other moves were made toward the end of June. The 15th Evacuation moved from Rome to Grosseto on the 23d of the month. The 94th left Montalto on the same day to set up at Montepescali, 10 miles south of Grosseto, where it was joined on 27 June by the 16th Evacuation. The 3d Convalescent moved to Grosseto on 29 June. Also on 29 June the 56th Evacuation opened at Venturina, near Piombino, 30 miles northwest of Montepescali. The venereal disease hospital moved on 26 June to Guincarico, about 5 miles from the sites of the 94th and 16th Evacuation Hospitals. The 38th Evacuation shifted from Rome to Massa Marittima, about 10 miles north of the venereal disease center, on 2 July.

By this date the rate of advance had slowed owing to the withdrawal of substantial forces for the invasion of southern France and to the more rugged terrain. For the first time since the fall of Rome the location of hospital sites with respect to availability of air evacuation became a problem, requiring reconnaissance from the air as well as on the ground. Hospitals caught up with the combat troops, and even outdistanced organic medical units on occasion. The 8th Evacuation for example, moved into the outskirts of Cecina while the fighting for that town was still in progress and was actually set up on 2 July forward of the 34th Division clearing station.

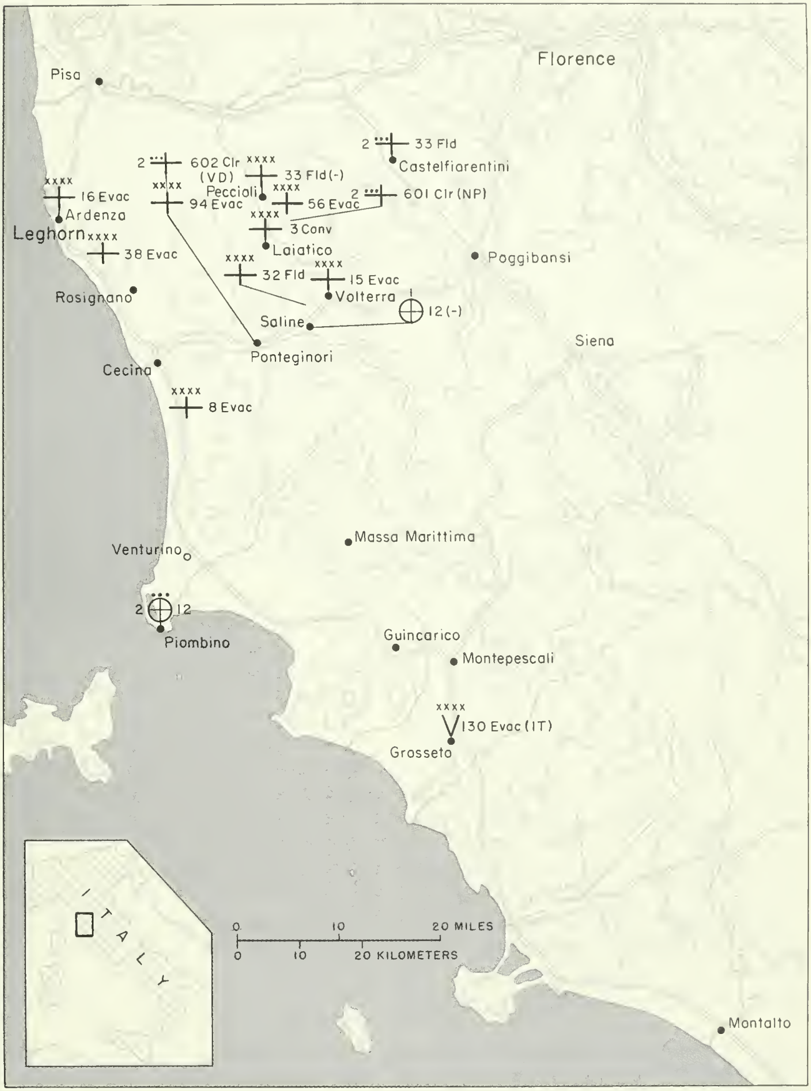
The next series of moves came toward the middle of July, when the 11th, 93d, and 95th Evacuation Hospitals were withdrawn from Fifth Army. The 94th Evacuation, with a platoon of the 601st Clearing Company attached, moved up to Ponteginori, about ten miles east of Cecina along the road to Florence, on 11 July; and the venereal disease hospital moved into the same area four days later. At the same time the neuropsychiatric hospital was established at Cecina. The 38th Evacuation opened on the coast road, twelve miles above Cecina, on 18 July, after a 24-hour delay because the area was still under fire. The 15th Evacuation moved to Volterra, a few miles beyond the site of the 94th. The 32d Field Hospital, released from attachment to the Peninsular Base Section, was established at Saline, halfway between the 15th and 94th Evacuations, on 23 July.

The 16th Evacuation operated at Ardenza, on the southern outskirts of Leghorn, from 26 July to 12 August. The 3d Convalescent moved on 2 August to Laiatico, twenty miles southeast of Leghorn; and the 56th Evacuation was established three days later about five miles farther north, at Peccioli. On 8 August the 601st Clearing Company set up its neuropsychiatric hospital at Montecchio, a mile or two south of the Peccioli site of the 56th Evacuation. The front was stabilized at about this time, with the actual fighting reduced to patrol actions along the Arno River line. (*Maps 27, 28*)

The Rome-Arno Campaign again demonstrated the value of the separate ambulance company, of the 400-bed evacuation hospital, and of the field hospital platoon as a forward unit. The shortcomings of these platoons with respect to size were overbalanced by their mobility in a campaign of rapid movement. The capacity of the 400-bed evacuation could be readily increased, even beyond its own expansion limits, by the attachment of one or more clearing platoons from the corps medical battalions. The field hospital platoons operating with the division clearing stations were also augmented from time to time by additional personnel and beds from other sources. In the Rome-Arno Campaign the field hospital platoons were able to move forward with the divisions they supported because holding units to care for their nontransportable patients were improvised from personnel of the corps medical battalions, with nurses borrowed from evacuation hospitals. As


Florence
Pisa
Castelfiorentini
XXXX
17 Evac
Peccioli
XXXX
94 Evac
Leghorn
Ardenza
3
33 Fld
Laiatico
Poggibonsi
2
33 Fld
Rosignano
XXXX
33 Fld(-)
Volterra
1
33 Fld
Saline
Ponteginori
Siena
2
601 Clr
(NP)
1
12
Cecina
XXXX
8 Evac
XXXX
38 Evac
Massa Marittima
XXXX
56 Evac
Venturina
2
12
Piombino
2
602 Clr (VD)
Guincarica
XXXX
16 Evac
Montepescali
XXXX
12 (-)
XXXX
15 Evac
XXXX
130 Evac (IT)
Grasseta
XXXX
3 Conv
ITALY
0
10
20 MILES
0
10
20 KILOMETERS
XXXX
95 Evac
Montalto

MAP 27—Fifth Army Hospitals and Medical Supply Dumps, 15 July 1944


Florence
Pisa
2 33 Fld
Castelfiorentini
2 602 Clr (VD)
XXXX 33 Fld (-)
XXXX 16 Evac
Ardenza
XXXX 94 Evac
Peccioli
XXXX 56 Evac
2 601 Clr (NP)
XXXX 3 Conv
Leghorn
XXXX 38 Evac
Laiatico
Poggibonsi
XXXX 32 Fld
XXXX 15 Evac
Volterra
Rosignano
12 (-)
Saline
Ponteginori
Siena
Cecina
XXXX 8 Evac
Massa Marittima
Venturino
2 12
Piombino
Guincarico
Montepescali
XXXX 130 Evac (IT)
Grosseto
ITALY
0 10 20 MILES
0 10 20 KILOMETERS
Montalto

MAP 28—Fifth Army Hospitals and Medical Supply Dumps, 15 August 1944

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Table 11—Admissions to Hospital and Quarters From Fifth Army, May–August 1944

Month	All Causes	All Nonbattle	Disease	Injury	Battle Casualties	Mean Strength[a]
May	23,586	15,462	12,499	2,963	8,124	236,826
June	32,623	21,677	17,570	4,107	10,946	231,360
July	21,219	14,836	12,313	2,523	6,383	162,003
August	12,555	11,723	9,928	1,795	832	151,133

[a] U.S. strength only.

Source: Annual Rpt, Surg, Fifth Army, 1944.

in previous Mediterranean campaigns, surgical, shock, and other specialist teams of the 2d Auxiliary Surgical Group worked with the field hospital platoons and the evacuation hospitals. The usual complement was one shock and four surgical teams for each field hospital platoon.[11]

It should be noted in this connection that the 750-bed evacuation hospitals in the Italian campaign were moved with much greater speed than had been the case in Tunisia. The 8th Evacuation, for example, struck its tents, moved 80 miles from Cellole to Le Ferriere, and set up again for operation in 30 hours, while the 38th closed in Rome, moved 160 miles to Massa Marittima, and reopened in 40 hours. The improvement owed something to accumulated experience, but more to the effective co-operation of corps and army in providing the necessary trucks when they were needed. For the most part, however, these larger units were not required to make rapid changes of position. As the lines of combat moved forward, the 750-bed evacuation hospitals tended to function toward the rear of the army area more as fixed than as combat units, eventually being replaced by base section hospitals.

Admissions to hospital and quarters from Fifth Army during the period of the Rome-Arno Campaign reached a peak in June of more than 32,000, of which one-third were battle casualties. (*Table 11*)

Evacuation From Fifth Army

For the first two weeks of the drive on Rome, evacuation from Fifth Army continued to follow the pattern of the preceding months. Casualties from the southern front were evacuated from the Carinola area by rail to Naples. The 41st Hospital Train, controlled by the Peninsular Base Section, operated between that city and the Sparanise railhead. The 42d Hospital Train, scheduled for southern France, was brought over from Africa and went into service between Sessa, near the main concentration of Fifth Army hospitals, and Naples, starting 12 May. As had been the case in Africa, the necessary hospital cars were converted from local rolling stock. Holding hospi-

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[11] (1) Annual Rpt, Surg, Fifth Army, 1944. (2) Annual Rpt, Surg, IV Corps, 1944. (3) Annual Rpt, Surg, II Corps, 1944. (4) Annual Rpt, 2d Aux Surg Gp, 1944. (5) Unit rpts of individual hosps.

TABLE 12—AIR EVACUATION FROM FIFTH ARMY HOSPITALS, 26 MAY–31 AUGUST 1944[a]

From	To	Air Miles	802d MAETS	807th MAETS	Total
Total			15,984	17,809	33,793
Priverno	Naples	70	221	135	356
Nettuno	Naples	95	6,105	3,407	9,512
Palo	Naples	135	381	454	835
Cerveteri	Naples	140	....	94	94
Tarquinia	Naples	160	107	138	245
Montalto	Naples	170	510	724	1,234
Castiglione	Naples	190	3,962	2,521	6,483
Ombrone (Grosseto)	Naples	205	688	709	1,397
Rosia	Naples	225	1,323	550	1,873
Follonica	Naples	230	323	61	384
Cecina	Naples	250	....	63	63
Ombrone	Rome	90	34	594	628
Follonica	Rome	110	208	4,452	4,660
Rosia	Rome	115	22	228	250
Cecina	Rome	140	2,100	3,442	5,542
Cecina	Grosseto	50	....	237	237

[a] Figures include patients from the French Expeditionary Corps, from the British components of VI Corps, from the Anzio area, and some Italian military and civilian personnel. Flights from the Eighth Army sector have been excluded, but some Eighth Army casualties are not separable from Fifth Army figures. Excludes Air Forces casualties insofar as possible.

Source: Annual Rpts, 802d and 807th MAETS, 1944.

tals at the railheads were maintained by the corps medical battalions. Casualties from Anzio continued through most of May to be evacuated exclusively by hospital ships and by LST's staffed by teams from the 56th Medical Battalion.

On the fifth day of the attack the encampment of the 56th Medical Battalion near Nocellito was bombed in bright moonlight, apparently deliberately, with two enlisted men killed, seven wounded, and extensive damage to equipment.

After the consolidation of the two fronts, air evacuation began from the army area, and thereafter, for the remainder of the campaign, forward hospitals were cleared by planes of the 802d and 807th Medical Air Evacuation Transport Squadrons. The first flight from the Nettuno airstrip was made on 26 May. Air evacuation for both U.S. and French forces was directed by the Office of the Surgeon, Fifth Army, which had made proximity to an airfield or to level ground where an airstrip might be constructed a condition in the selection of hospital sites. By 1 June approximately 400 patients a day were being flown from the combat zone to fixed hospitals in Naples and Caserta.[12] (*Table 12*)

Holding units for air evacuation were operated at various points by two collect-

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[12] Ltr, Gen Stayer, Surg, NATOUSA, to TSG, 2 Jun 44.

TABLE 13—EVACUATION FROM FIFTH ARMY TO PBS HOSPITALS, 1 JANUARY–31 AUGUST 1944

Month	Ambulance	Rail	Hospital Ship	LST	Air	U.S. Army	Total [a]
Total.........	23,473	15,071	30,271	2,950	23,397	80,299	[b] 102,298
January............	5,094	8,874	2,768	0	0	15,020	16,736
February...........	3,639	826	9,070	0	0	12,794	13,535
March..............	2,312	0	4,986	647	0	7,655	7,945
April...............	1,375	0	4,361	607	0	6,063	6,343
May................	6,367	5,371	6,546	1,696	5,185	15,846	25,165
June................	905	0	2,540	0	3,855	8,928	[b] 14,436
July................	3,067	0	0	0	10,973	10,403	14,040
August..............	714	0	0	0	3,384	3,590	4,098

[a] Includes U.S. Army, U.S. Navy, Allies, POW's.

[b] Includes 7,136 patients for whom no means of evacuation is given. Most of these were probably evacuated by air, which explains in part the large discrepancy between the total evacuated by that means shown in this and in the preceding table. The remainder of the discrepancy may be accounted for in British casualties, not taken to PBS hospitals.

Source: Annual Rpt, Surg, MTOUSA, 1944, an. B, app. 18.

ing companies of the 161st Medical Battalion and by the clearing company and one collecting company of the 163d Medical Battalion. The 56th Medical Battalion handled both air and sea evacuation at Anzio until 23 June, when it was relieved by the 54th and departed for Naples to stage for the invasion of southern France. The 402d Collecting Company of the 161st Medical Battalion, assigned to the French Expeditionary Corps, even helped to construct and maintain an airstrip, and directed the approach and take-off of the C–47 transports.

Transportation between hospitals and airfields was handled by corps medical battalions. The 162d Medical Battalion also cleared patients from evacuation hospitals in Rome to the 59th Evacuation, which functioned as a Peninsular Base Section station hospital at Anzio until 23 June. By this date more than 3,000 fixed beds were available in the Italian capital, so that forward evacuation hospitals began sending casualties to Rome instead of to Naples and Caserta.

During the entire 7-month period of the Anzio, Cassino, and Rome-Arno Campaigns, casualties were evacuated from Fifth Army hospitals to Peninsular Base Section installations by ambulance, hospital train, hospital ship, LST, and transport plane. The figures are not reported by campaigns, only on a monthly basis. For the period 1 January–31 August 1944 the total was 102,298. (*Table 13*)

Medical Supplies and Equipment

Like the Fifth Army hospitals, the supply dumps of the 12th Medical Depot Company moved forward only after II and VI Corps had joined at Anzio. The

Loading an Ambulance Plane on Nettuno Airstrip, June 1944

company headquarters and base platoon and the 2d Platoon went from Calvi Risorta to Nocellito on 20 April, in the general alignment of Fifth and Eighth Armies. The 2d Platoon moved forty-five miles to Itri on 23 May, and went on to Rome on 9 June. Headquarters and the base platoon had meanwhile moved from Nocellito to Anzio on 5 June, where the 1st Platoon reverted to control of the parent company.[13]

The 1st Platoon was established in Civitavecchia on 11 June, only four days after the capture of the city and before the harbor had been cleared. On 18 June, headquarters and the base platoon went on to Grosseto. Ten days later the 2d Platoon turned over the supply function in Rome to Peninsular Base Section installations and followed the rapidly moving army to Piombino. The 1st Platoon was in Cecina on 9 July.

The 12th Medical Depot Company was reorganized at this time, the personnel complement being reduced from 178 to 150. The three platoons were redesignated the 1st, 2d, and 3d Storage and Issue Platoons.[14]

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[13] Principal sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1944; (2) Annual Rpt, 12th Med Depot Co, 1944; (3) Annual Rpts, Surgs, II, IV, and VI Corps, 1944.

Headquarters and the 1st Storage and Issue Platoon moved from Grosseto to Saline on 30 July, where they were joined on 14 August by the 3d Storage and Issue Platoon. The latter unit was established in the vicinity of Florence at the end of the month.

In all these rapid changes of position, one platoon of the 12th Medical Depot Company was always in support of each of the two U.S. corps engaged, with the headquarters group accessible to both. The French Expeditionary Corps had its own system of combat medical supply, which was organized under the same U.S. Table of Organization as its American counterpart, and was supplied through the same channels.[15]

Medical supplies were brought up by water, air, and truck as circumstances dictated, with no shortages developing except the perennial shortages of blankets, litters, and pajamas stemming from faulty property exchange with air evacuation units. This shortage was felt at all airstrips used for evacuation, since the incoming planes were on other missions, which generally precluded the carrying of bulky medical items.

One of the features of the supply system, in the later phases of the campaign, was the daily arrival of whole blood by plane from the 15th Medical General Laboratory.

Professional Services in the Army Area

The months of March and April 1944, when the armies were regrouping and re-equipping for the crushing attack that would carry Allied power to the Arno River, were used by the Medical Department to review past practices and improve techniques for the future. The conferences and seminars that medical officers had been able to attend only spasmodically up to that time were systematized, with all phases of the work of the medical service being discussed. Medical officers of all levels profited by these interchanges before they returned to active combat support.[16]

Medicine and Surgery

Forward Surgery—The techniques of forward surgery in the Rome-Arno Campaign did not differ greatly from those employed during the preceding eight months in Italy. While there were a number of clinical improvements, including a more extensive use of penicillin and the unrestricted availability of whole blood in the field hospital platoons, the only important administrative change was the withdrawal of twenty-eight teams, or half of the entire complement, of the 2d Auxiliary Surgical Group early in July to stage for the coming invasion of southern France.[17] The loss of these teams was not made up until the next stage of the Italian campaign.

Neuropsychiatry—The early success of the 3d Division's experiments at Anzio in treating psychiatric cases at the division level led General Martin to initiate similar experiments in the 88th Division, which had not yet been in combat. It was hoped that the incidence of psychiatric casualties could be reduced if adequate facilities for early treatment existed from the start.[18]

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[14] TOE 8–667, 17 Mar 44.

[15] ETMD for May 1944. At the start of the Rome-Arno Campaign, both U.S. and French medical depot companies were organized under T/O 8–661.

[16] Annual Rpt, Surg, Fifth Army, 1944.

[17] Special Rpt, 2d Aux Surg Gp, 27 Oct 44.

The 88th Division Training and Rehabilitation Center was formally established on 18 April 1944, commanded by a line officer with two noncommissioned officers as assistants, all with extensive combat experience. The division psychiatrist, Capt. (later Maj.) Joseph Slusky, acted as consultant. The center was attached for rations and quarters to the clearing company of the 313th Medical Battalion. Actual operation began on 11 May when the division went into combat. The procedure was simple, but effective.

An exhaustion or psychiatric case admitted to the clearing station was examined by the division psychiatrist, who evaluated the severity of the symptoms. The patient was retained at the clearing station for two or three days, where he was given sodium amytal three times a day after meals. Sedation was sufficient to ensure adequate rest and sleep, but not heavy enough to keep the patient from going to mess and otherwise taking care of himself. After 24 to 48 hours of this treatment, the patient was again examined by the division psychiatrist. If he appeared to be responding, he was retained. If not, he was transferred to the Fifth Army Neuropsychiatric Center, operated by the 601st Clearing Company.

The patients who showed improvement under sedation were given suggestive and supportive therapy and turned over to the division Training and Rehabilitation Center, where they were given lectures combined with calisthenics, hikes, and other physical activities, including tactical training with weapons. Most were ready to return to duty after two days at the center. Others were retained for a few days longer, while those whose symptoms persisted were evacuated to the neuropsychiatric hospital.

Each patient was re-examined by the division psychiatrist before returning to combat and was given a final therapy session oriented toward reassurance. Returns to duty were made through nonmedical channels.

The record for the period 11 May–9 June, during which the 88th was in continuous combat under particularly difficult conditions, showed a total of 248 psychiatric admissions to the division Training and Rehabilitation Center. Of these, 141 or 56.9 percent, were returned to duty from the center. One hundred and four were evacuated to the 601st Clearing Company, from which 24 were later returned to duty. Total returns to duty were thus 165, or 66.5 percent. Eighty, or 32.3 percent, were lost to the division. Two remained under treatment at the end of the period, and one was absent without leave.

The results of this experiment led to an order of 2 July 1944 directing all divisions of Fifth Army to establish similar training and rehabilitation centers. Thereafter, admissions to the Fifth Army Neuropsychiatric Center were exclusively by transfer from these division installations. A Fifth Army consultant in neuropsychiatry, Maj. (later Lt. Col.)

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[18] (1) Annual Rpt, Surg, Fifth Army, 1944. (2) Annual Rpt, Surg, 88th Div, 1944. (3) Hanson, comp. ed., "Combat Psychiatry," Bulletin, *U.S. Army Medical Department*, Suppl (November 1949). See also pp. 284–85, above.

TABLE 14—DISPOSITION OF NEUROPSYCHIATRIC CASES IN FIFTH ARMY, MAY–AUGUST 1944

Month	Returned to Duty				Evacuated From Army Area		Total Dispositions
	From Divisions		From Hospitals				
	No.	Percent	No.	Percent	No.	Percent	
May	283	16.0	437	24.6	1,054	59.4	1,774
June	429	26.0	454	27.5	767	46.5	1,650
July	378	23.5	487	30.3	744	46.2	1,609
August	105	13.6	[a]254	32.8	415	53.6	774

[a] Includes 95 returned to limited or Class B duty.

Source: Annual Rpt, Surg, Fifth Army, 1944.

Calvin S. Draper, was also named at this time. A further development, which went into effect the first of August, was the return of certain neuropsychiatric casualties to limited or noncombat duty in the army area, a disposition board for this purpose being set up by the 3d Convalescent Hospital.

In general, the psychiatric cases developing in the drive to Rome and the subsequent pursuit to the Arno River were less severe than those encountered during the static fighting before Cassino and on the Anzio beachhead. The incidence was higher in the divisions new to combat, but the response to treatment in these divisions was excellent. The record of the 88th Division has already been noted. The 91st returned 68.1 percent of its 116 psychiatric casualties to duty between 13 and 31 July when the division was in combat. The 85th Division, out of action between 1 July and 15 August, had a smaller total of such cases, 76 being admitted in this period to the division training and rehabilitation center, but the cases proved more obstinate, only 51 percent being returned to duty at the division level.

The disposition of psychiatric cases in Fifth Army as a whole for the last four months of the Rome-Arno Campaign is shown in Table 14.

Common Diseases—Malaria in Fifth Army reached the year's peak of 94 cases per 1,000 per annum in June 1944, dropping only slightly to 82 in July. During these two months the season was at its height, and the army was operating in areas that had been controlled by the enemy during the earlier part of the breeding season. Atabrine continued to be the primary preventive measure available, the use of netting and gloves being for the most part impractical in combat.

A sharp rise in the incidence of diarrhea and dysentery (including bacterial food poisoning) from 28 per 1,000 per annum in May to 102 in June and 135 in July may be explained by the simultaneous advent of warm weather, the fly season, and the fresh fruit season. Even the July figure, however, was far below the rate of 195 cases per 1,000 per annum experienced in June 1943 in North Africa. Insecticides were available in adequate quantities, and the diseases were quickly overcome when the period

Table 15—Venereal Disease Rates by Divisions, Fifth Army, May–August 1944 [a]

Month	1st Armored	34th Infantry	3d Infantry	45th Infantry	36th Infantry	88th Infantry	85th Infantry	91st Infantry
May	57	71	23	55	63	44	10	(b)
June	22	40	(c)	67	12	32	20	8
July	33	54	....	(c)	(c)	45	56	12
August	38	144	....	....	....	34	36	11

[a] Rates expressed as number per annum per 1,000 average strength.
[b] Not yet in Italy.
[c] Withdrawn from Fifth Army.

Source: Annual Rpt, Surg, Fifth Army, 1944.

of active fighting came to an end in early August.

Venereal disease in the summer of 1944 followed a predictable pattern, the rate being relatively low during periods of combat and high during the rest and bivouac periods. (*Table 15*) The rate continued to be highest among veteran troops.

Dental Service

On 6 May 1944, just before the launching of the drive on Rome, the Fifth Army dental surgeon, Colonel Cowan, was returned to the United States on rotation. His acting successor was Maj. (later Lt. Col.) Clarence T. Richardson of the 16th Evacuation Hospital.[19]

Major Richardson inherited a dental establishment much better equipped to fulfill its mission than the one Colonel Cowan had taken to Salerno eight months earlier. Facilities for prosthetic work were still less than adequate, but in other respects Fifth Army began the drive to Rome well prepared to meet the dental requirements of its troops. Each of the divisions had improvised laboratory facilities. In addition, three of the four mobile dental laboratories—built on 2½-ton truck chassis—reaching the theater in May were assigned to Fifth Army, the fourth going to the Air Forces.

By June, when IV Corps went into the line north of Rome, the Fifth Army Dental Clinic, operated by the 602d Medical Clearing Company, was functioning smoothly enough to care for all cases that could not be handled by the divisions. IV Corps, accordingly, set up no dental clinic of its own, while the II Corps clinic was discontinued toward the end of the month. Aside from inadequate prosthetic facilities, the only serious defect in the Fifth Army dental setup at this time was the familiar problem of getting dental services to troops in distant positions, and the correlative loss of man-hours in sending men to the rear to the Army clinic.

The reorganization of July gave a

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[19] The major sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1944; (2) Annual Rpt, Med Sec, MTOUSA, 1944; (3) MS, Dental History, North African and Mediterranean Theaters of Operations; (4) Unit rpts of div surgs and med installations in Fifth Army during the period 11 May–31 Aug 44.

Field Unit of the Fifth Army Dental Clinic *in the Piombino area, July 1944.*

dental unit to the 12th Medical Depot Company, but personnel and facilities for it were not available until fall.

For Fifth Army as a whole, the ratio of dental officers to troop strength dropped sharply from one dental officer for each 987 men in May 1944 to one for each 1,019 men in June. The July and August ratios were 1:915 and 1:963, respectively. The work accomplished by these officers and their staffs during the last four months of the Rome-Arno Campaign is summarized in Table 16.

Veterinary Service

The May 1944 offensive carried Fifth Army through some of the most rugged and difficult terrain in Italy. In the drive from the Garigliano front to Rome, II Corps was supported by eight Italian pack trains, with an aggregate strength of 97 horses and 1,897 mules. Divisional animals, including those assigned to two pack field artillery battalions, included 106 horses and 1,270 mules. Pack trains of the French Expeditionary Corps in the

TABLE 16—DENTAL SERVICE IN FIFTH ARMY, MAY–AUGUST 1944

	May	June	July	August
Admissions	20,569	15,599	15,298	17,289
Sittings	34,951	23,876	24,969	27,316
Restorations	30,031	19,651	19,564	21,764
New dentures	1,296	773	796	1,000
Dentures repaired	426	240	394	423
Teeth extracted	7,034	3,959	4,655	4,612
Teeth replaced	9,933	6,316	6,697	7,193
Total operations	72,115	50,989	55,737	56,777
Restorations per officer	135	92	123	153
Operations per officer	309	239	351	395
Days of duty	6,911	6,407	4,912	4,400

Source: Annual Rpt, Surg, Fifth Army, 1944.

same operation utilized 2,023 horses and 7,266 mules. In the drive, 146 animals were killed in action and 1,111 were wounded. The particularly heavy animal casualties in the French sector made it necessary to attach the 1st Veterinary Hospital (Italian), a Peninsular Base Section unit, to the French Expeditionary Corps.[20]

Veterinary hospitals in support of Fifth Army experienced considerable difficulty in finding sites with buildings suitable for animal use. Close support was nevertheless given by these units. The Italian-staffed 110th Veterinary Hospital moved from the Carinola area to Nettuno on 20 June, and to Rome on 4 July. The 130th Veterinary Hospital, also Italian staffed, moved from Nocellito to Rome on 1 July, to Grosseto a week later, and to Saline on 1 September. The U.S. 17th Veterinary Evacuation Hospital, supporting the 601st and 602d Field Artillery Battalions, moved seven times between 4 April and 15 July. Among its operating sites were Monte San Biagio near Terracina; Cori and Nemi in the beachhead area; Castagneto, south of Cecina; and Ponteginori west of Cecina on Highway 68. With the battalions it supported, the 17th was assigned to Seventh Army on 20 July.

Replacements for animal casualties were supplied by the Base Remount Depot, operated by Peninsular Base Section. To minimize delay as much as possible, however, each veterinary hospital maintained a small exchange unit that supplied a sound animal for each wounded one received. Only on the French front, where animals were most numerous and casualties heaviest, did the system break down. In those cases where hospital exchange units were exhausted, fresh animals were allotted by Fifth Army.

When flat or rolling country was reached after the fall of Rome, all animal units were placed in rest areas, where they remained throughout the summer. The only exception was a period in July when elements of the 1st Armored Division, operating in mountains between Massa Marittima and Volterra, substituted horses for halftracks and trucks.

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[20] The major sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1944; (2) Veterinary History, Mediterranean Theater of Operations; (3) Miller, *United States Army Veterinary Service in World War II.*

During the rest period, all Italian pack trains and veterinary hospitals were reorganized in accordance with U.S. Tables of Organization and Equipment. Four new Italian pack companies were also organized at this time, and the 20th Mule Pack Group, which controlled all the Italian pack trains, set up a center under Colonel Canani for training recruits in the handling of pack animals.[21]

Medical Support for the Eastern Command

Before the end of 1943, negotiations began for the use of Russian airfields by U.S. bomber squadrons based in Italy and in the United Kingdom. Arrangements were finally completed in the spring of 1944, with the designation of three bases in the Ukraine. The headquarters base was at Poltava, 200 miles east of Kiev. The others were located at Mirgorod, 50 miles west of Poltava, and at Piryatin, another 50 miles in the direction of Kiev. Collectively, they were administered as the Eastern Command (EASCOM). The first flight, made by planes of the Fifteenth Air Force from Italy on 2 June 1944, was timed to be contemporaneous with the capture of Rome and the launching of the Normandy invasion. The first task force of B–17's, personally led by General Eaker, destroyed marshaling yards and shops at Debrecen in eastern Hungary before ending its mission at Poltava airfield.[22]

Lt. Col. William M. Jackson, Eastern Command surgeon, established his headquarters at Poltava, where his staff included a Veterinary Corps officer and a Sanitary Corps officer. Each of the three bases was supported by a 75-bed provisional hospital expanded from a 24-bed aviation dispensary. Instead of the two medical officers called for in the TOE, the Poltava and Piryatin hospitals had four each, while Mirgorod had three. Each hospital had the one dental officer and one supply officer (MAC) provided in the TOE, and each had four nurses. Eighty-five enlisted men, divided among headquarters and the three hospitals, brought total Medical Department personnel to 117. All medical personnel and facilities came from the United Kingdom.[23]

The first problem faced by Colonel Jackson and his staff was one of sanitation. Whatever war may have left of water and sewerage systems had been destroyed by the Germans as they retreated, together with virtually all buildings. The Russians had been too short of medical personnel themselves to take adequate preventive measures, and typhus, malaria, dysentery, and venereal diseases were prevalent. In the absence of buildings, the hospitals were set up in tents, close to the airfields they served. The hospital at Piryatin was well concealed in a wooded area near a river, but those at Poltava and Mirgorod were in open fields. All units were established and ready to receive patients by 1 June.

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[21] See also pp. 263–65, above. Colonel Canani was official liaison officer between the Italian pack and veterinary units and the office of the Fifth Army veterinarian, Colonel Pickering.

[22] This section is based primarily on the following: (1) Craven and Cate, eds., *Europe: ARGUMENT to V–E Day*, pp. 308–19; (2) Maj Albert Lepawsky, History of Eastern Command, USSTAF; (3) History of Operation FRANTIC, 26 October 1943–15 June 1944; (4) EASCOM History, 1 Oct 1944–1 April 1945; (5) Unsgd, undtd doc, Assignment of Nurses in Russia.

[23] (1) TOE 8–450 (2) CM 12424, 28 Mar 44, Knerr, Spaatz, and Grow to Deane for Jackson. (3) Hist of FRANTIC 26 Oct 43–15 Jun 44, Med an.; (4) Link and Coleman, *Medical Support of the Army Air Forces in World War II*, pp. 562–63. For the first three weeks there were only three nurses at Mirgorod, one of the twelve from England having been disqualified at Tehran before entering the USSR. She appears to have been replaced later.

The medical service of the Eastern Command underwent its acid test three weeks later. The first shuttle bombing mission by the Eighth Air Force from British bases arrived at Poltava the afternoon of 22 June after a successful raid on a synthetic oil plant south of Berlin. The bombers were apparently trailed to their destination by a German plane, and that night the Poltava field was attacked in force. At the time of the attack there were 370 permanent and 714 transient U.S. personnel at the base.

It was estimated that 110 tons of bombs were dropped over a 2-hour period. Every one of the 73 B–17's on the field was hit and 43 were destroyed, together with 3 C–47's, one F–5, numerous ground vehicles, and quantities of gasoline, oil, bombs, and ammunition. Twenty-five Russian YAK fighters were also damaged on the ground. Two Americans, a pilot and copilot, were killed and 14 wounded. The Russians, who manned the antiaircraft batteries and fought the fires on the field, lost 30 killed and 95 wounded. First aid was given in the slit trenches that served for shelter, the wounded being moved to the hospital when the raid was over.

The following night the other two bases were attacked, but with less disastrous results. A gasoline dump was hit at Mirgorod, but at Piryatin the Germans failed to locate the target and contented themselves with bombing the town.

Poltava was nonoperational for forty-eight hours and operated to a limited extent only for a month. Russian sappers were still locating and detonating unexploded bombs as late as 7 September.

After the attacks of 22–23 June, installations were dispersed as much as possible. The hospitals were relocated some distance from the airfields, and an attempt was made to enlarge the available medical facilities. A request for a 400-bed field hospital to replace the three outsize dispensaries was refused, however, on the ground that no field unit was available for that purpose.[24]

The bases became steadily less important as the Russian front pushed westward and the advance of the Allied Armies in Italy and France brought more enemy targets into normal bomber range. Personnel were gradually withdrawn until by 1 October only Poltava retained a medical complement, reduced to 3 medical officers, 4 nurses, and 14 enlisted men. Housed in three prefabricated barracks, this unit continued into 1945, but performed only routine dispensary functions.

The medical installations of the Eastern Command were supplied from Tehran, and during the period of greatest activity patients were evacuated by air to the 19th Station Hospital in that city. After 1 October 1944, evacuation was to the 113th General Hospital at Ahwaz, Iran. Considering the unsanitary conditions and the prevalence of disease in the Eastern Command, the medical service was excellent. The average weekly noneffective rate was 18.32 per 1,000, only a little higher than that for similar units in the United Kingdom.

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[24] (1) CM U–64940, Spaatz to ETOUSA, 15 July 44. (2) CM E–38685, 19 Jul 44, Eisenhower to USSTAF. A field hospital organized and equipped by the French Air Force had been offered to the Mediterranean Allied Air Force in the spring of 1944, but apparently had been diverted to other uses. See entry, 3 Apr 44, in Journal, Col Reeder.

CHAPTER IX

The Italian Communications Zone Southern Phase

Changes in Theater Organization

By the beginning of 1944, preparations for the frontal attack on the European continent dominated Allied strategy and dictated changes in the command structure in the Mediterranean. General Wilson succeeded General Eisenhower as Supreme Allied Commander, with General Devers as his deputy. At the same time, in anticipation of a probable invasion of southern France, the theater boundaries were redrawn to include that area as well as Austria, the Balkans, and Turkey.

Medical Organization at the Theater Level

The invasion of Italy and subsequent operations in the fall and winter of 1943 served to emphasize the organizational confusion in higher headquarters. There was no clear division of authority or function between Allied Force Headquarters and the U.S. commands theoretically subordinate to it, or between those commands themselves. The principal area of overlap lay between Headquarters, North African Theater of Operations, and Headquarters, Services of Supply. It was therefore these two commands that were primarily affected by a reorganization in February 1944, under which the Services of Supply organization became in fact a communications zone headquarters. The Medical Section, AFHQ, remained substantially as it was, but operation of all U.S. medical services in the communications zone, including hospitalization and evacuation, were transferred from the NATOUSA medical section to its SOS counterpart, whose functions previously had been limited to medical supply. A number of key personnel were transferred along with their functions. After 24 February, the effective date of the reorganization, the activities of the NATOUSA medical section were largely confined to policy making and co-ordination.[1]

As a first step in the expansion of the medical section, SOS NATOUSA Colonel Shook, who had headed the section since August 1943, became communications zone surgeon. His administrative officer, Maj. (later Lt. Col.) James T. Richards of the Pharmacy Corps, was transferred from temporary

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[1] Hist of AFHQ. (2) Annual Rpt, Med Sec, MTOUSA, 1944. (3) Hist of Med Sec, Hq, COMZ MTOUSA. (4) Interv with Col Shook, 31 Mar 52. (5) Munden, Administration of Med Dept in MTOUSA, pp. 93–105. More detailed discussion will be found in (6) Armfield, *Organization and Administration*, pp. 275 ff. See also, (7) Ltrs, Col Munly, to Col Coates, 7 Nov 58; and Dr. Shook to Coates, 6 Nov 58, both commenting on preliminary draft of this volume.

Colonel Shook

duty in the NATOUSA surgeon's office. The hospitalization and evacuation officers, Lt. Col. (later Col.) William Warren Roe, Jr., and Lt. Col. (later Col.) Albert A. Biederman, were also transferred along with their functions from the office of the surgeon, NATOUSA. The dental officer of the SOS medical section was Lt. Col. (later Col.) Karl H. Metz.

The chief of professional services, Lt. Col. (later Col.) Joseph G. Cocke, assumed his new duties on 12 March, transferring from the Mediterranean Base Section. The basic organization was completed on 24 March with the arrival of Capt. (later Maj.) Elizabeth Michener, chief nurse; Lt. Col. (later Col.) Duance L. Cady, communications zone veterinarian; and Lt. Col. Richard P. Mason, preventive medicine officer and medical inspector. Additional personnel were added as needed through March and April, the only important shift coming in mid-May. At that time, Cocke became Shook's deputy, being replaced as chief of professional services by Colonel Roe. Lt. Col. (later Col.) Jenner G. Jones, who had been executive officer when the SOS medical section was concerned solely with supply, became chief of the medical supply branch. Allotted personnel as of 21 May, when the organization was stabilized, included 21 officers, a warrant officer, and 44 enlisted men.

As the communications zone medical section expanded, the medical section of NATOUSA modified its functions in keeping with its more restricted policy-making and planning role. Personnel declined, owing to the loss of operating functions, by transfer to Services of Supply. On 1 March 1944 Maj. Gen. Morrison C. Stayer, former surgeon of the Caribbean Defense Command, replaced General Blesse as Surgeon, NATOUSA, and Deputy Director of Medical Services, AFHQ. The British Director of Medical Services, General Cowell, was himself relieved on 19 May by Maj. Gen. William C. Hartgill, another Royal Army Medical Corps officer. General Blesse, who was being recalled to the zone of interior to become surgeon of the Army Ground Forces, remained in the theater until 24 April, acting as General Stayer's deputy and retaining his function as Medical Inspector, AFHQ. General Stayer took over the duties of medical inspector on Blesse's departure. The section retained limited administrative functions, including the consultant service and various duties in the field of preventive medicine. On the

MEDICAL SECTION OF NATOUSA AT CASERTA, *26 July 1944. Front row, left to right: Lt. Col. Joseph Carmack, Lt. Col. Asa Barnes, Col. Lynn H. Tingay, Colonel Standlee, General Stayer, Lt. Col. Bernice M. Wilbur, Col. William C. Munly, Colonel Churchill, Colonel Simeone; back row, left to right: Colonel Hanson, Maj. Joseph W. Still, Colonel Noonan, Colonel Long, Colonel Stone, Col. Oscar S. Reeder, Colonel Radke, Capt. John H. Slattery.*

side of professional services, there was actually some expansion, a veterinary section under Colonel Noonan being set up in mid-March.

Relations between the NATOUSA and SOS medical sections remained close, despite early fears that the theater medical section might seek to continue operating activities and reluctance on the part of some officers to be transferred from a higher to a lower headquarters. The policy-determining role of the NATOUSA medical section imposed a degree of co-ordination, while the transfer of personnel in the long run made for friendly working relations between the two groups.

In July, with the Allied armies approaching the Arno River, both Allied Force Headquarters and Headquarters, NATOUSA, moved from Algiers to Caserta. Together with the other offices of American headquarters, the theater medical section was established in the royal palace. The Air Forces medical section was already located in the palace, having established offices there late in May. The British medical component of AFHQ, while no longer sharing a building with the Americans, was physically near enough to permit continued co-operation. Headquarters, Communications Zone, including the SOS medical section, was established in close proximity to the others in buildings vacated by a general hospital on 20 July.[2]

The Peninsular Base Section

Plans for the Italian campaign called for the early establishment of a base section in the Naples area. A preliminary organization was activated in Casablanca on 21 August 1943 as the 6665th Base Area Group (Provisional), with medical personnel drawn from the Atlantic Base Section, whose activities were rapidly declining. An advance echelon of the medical section debarked at Naples on 4 October from the first troopship to enter the bay. The entire section was ashore by 10 October.[3]

The 6665th Base Area Group remained under Fifth Army control until 1 November, when it was formally reconstituted as the Peninsular Base Section. During this interval, the Fifth Army surgeon acted also as the base surgeon. He was succeeded in the latter capacity on 9 November by Colonel Arnest, who had served as surgeon of II Corps since the North African landings.

Although both cholera and typhus had been reported in Naples ten days before the capture of the city, American medical officers found the general health situation good.[4] The most serious problem was sanitation, since the water supply had been disrupted and the sewerage system was not functioning for lack of water, but facilities were quickly restored by the Allied Military Government, in co-operation with British and U.S. Army engineers. Pending the arrival of fixed installations, hospitalization for American troops in the city was provided by the 307th Airborne Medical Company and the 162d Medical Battalion, with the 95th Evacuation Hospital taking over on 9 October. The 3d Convalescent Hospital also began taking patients in the Naples area on 12 October.

By the end of 1943, the Peninsular Base Section was the largest base organization in the theater, both in terms of personnel and in terms of the number of fixed beds under its control. It continued to grow at the expense of the declining North African bases, reaching its peak strength in August 1944.

Air Forces Medical Organization

The medical organization of the Air Forces units in the Mediterranean was realigned early in 1944. The over-all Allied command remained the Mediterranean Allied Air Forces, with the Army Air Forces, Mediterranean Theater of Operations (AAF MTO), as its U.S. component. The American command included three major units: the Twelfth Air Force, now primarily a light and medium bomber group; the Fifteenth Air Force, a heavy bomber group; and the Army Air Forces Service Command. Headquarters of the U.S. command organization was set up in Caserta in February. Twelfth Air Force headquarters was at Foggia, Fifteenth Air Force headquarters was at Bari, and headquarters of the service command was at Naples.[5]

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[2] See p. 336, below.

[3] (1) Annual Rpt, Med Sec, NATOUSA, 1943. (2) Annual Rpt, Surg, PBS, 1943. (3) Hq, ETOUSA, Rpt on PBS NATOUSA, 10 Feb 44. (4) Annual Rpt, Surg, Fifth Army, 1943.

[4] The ranking U.S. civil affairs officer was General Hume. For the civil affairs aspects of the Italian campaign, see pp. 360–62, below.

The Fifteenth Air Force was still being built up, reaching its peak strength about the time of the first shuttle bombing between Italian and Russian bases.[6] In that operation and in the strategic bombing of Germany generally, the Fifteenth Air Force was responsible to the U.S. Strategic Air Forces in Europe, a European theater command, but in matters of administration, supply, and training, as well as in its Mediterranean operations, it remained under control of the Mediterranean Allied Air Forces and the U.S. Army Air Forces, Mediterranean Theater of Operations.

The top co-ordinating U.S. air command, the Army Air Forces, MTO, was originally organized without any medical section, but the need for one was quickly apparent and a small section was established in February 1944. The position of surgeon went to the senior Air Forces medical officer in the theater, Colonel Elvins, who was succeeded in April by Col. Edward J. Tracy. Colonel Elvins' replacement as Twelfth Air Force surgeon was Col. William F. Cook. The Fifteenth Air Force surgeon was Col. Otis O. Benson, Jr., and the surgeon of the Army Air Forces Service Command was Col. Louis K. Pohl.

The functions of the Twelfth and Fifteenth Air Force surgeons were comparable to those of an army surgeon. The duties of the surgeon, AAF MTO, were confined primarily to policy matters and to maintaining close liaison with the medical service of the British component of the MAAF. The service command medical section was the effective operating agency for Air Forces medical activities at the theater level, including administration of hospitals, evacuation, medical supply, sanitation and preventive medicine, and medical plans. The AAFSC surgeon was also the principal point of contact for exchange of technical information with the NATOUSA medical section.

Hospitalization in the Communications Zone

Fixed Hospitals in PBS

One of the first tasks of the 6665th Base Area Group medical section was to survey the city of Naples for hospital sites. Various Italian hospitals and school buildings were examined and the best of them were tabbed for Medical Department use. Aside from these, the most suitable area for additional medical installations was the Mostra Fairgrounds at Bagnoli, some three or four miles from the heart of Naples. Site of Mussolini's colonial exposition of 1940, the fairgrounds contained numerous relatively spacious buildings of stone and tile construction, with water, sewerage, and power facilities and good highway and rail connections. Many buildings had been badly damaged by Allied bombings, and the retreating Germans had destroyed others, but the advantages so far outweighed the drawbacks that the Fifth Army surgeon got the entire area set aside for hospital use. It quickly be-

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[5] This section is based primarily on the following: (1) Hist, Twelfth Air Force Med Sec, 1942–44; (2) Med Hist, Fifteenth Air Force, 1944. (3) Annual Med Hist, AAFSC MTO, 1944; (4) Link and Coleman, *Medical Support of the Army Air Forces in World War II*, pp. 438–48. See also Armfield, *Organization and Administration*, pp. 269–75.

[6] See pp. 320–22, above.

Medical Center at the Mostra Fairgrounds in Bagnoli, Near Naples

came the staging site for medical installations arriving in Italy.[7]

In order to realize the full possibilities of the Mostra Fairgrounds, a provisional medical center was tentatively organized on 25 October 1943, with headquarters personnel drawn from the 161st Medical Battalion. Other fixed hospitals went into the Caserta area, close behind the Fifth Army front, and still others were attached to Air Forces units operating in the heel of Italy and from the Foggia bases. (*Map 29*)

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[7] This section is based primarily on the following: (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Annual Rpt, Med Sec, MTOUSA, 1944; (3) Annual Rpts, Surg. PBS, 1943 and 1944; (4) Unit rpts of med units mentioned in the text.

Naples and the Medical Center—The first American fixed hospital in Italy was the 118th Station Hospital, which opened 14 October in the buildings of an Italian military hospital in Naples. The 106th Station opened in a school building three days later. Both hospitals operated almost from the start in excess of their 500-bed Table of Organization capacities.

The first fixed hospital to open at the fairgrounds was the 182d Station, which received its first patients on 19 October. The 3d Convalescent was already established on the fairgrounds but remained a Fifth Army unit, subject to withdrawal on call of the army surgeon. These two hospitals, and the 4th Medical Supply Depot, were functioning in the area when the fairgrounds were hit by enemy planes the night of 21 October. The toll was 11 killed and 55 wounded among both patients and medical personnel, and there was severe damage to installations, but both hospitals continued to function without interruption.

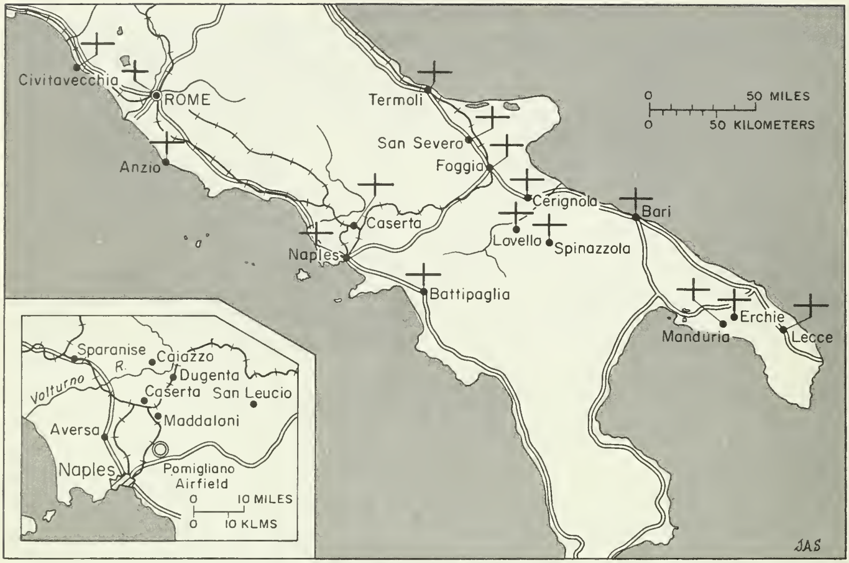
During November and December, hospital facilities in Naples built up rapidly. The 225th Station joined the medical center group on 10 November, followed by the 23d, 21st, and 45th General Hospitals on 17 November, 29 December, and 1 January 1944, respectively. The 17th General, meanwhile, had taken over on 11 November the Italian civil hospital in Naples formerly occupied by the 95th Evacuation, and the 300th General had opened in buildings of a Naples tuberculosis sanatorium a few days later. The 70th Station, sited in the Naples Academy of Fine Arts, opened on 25 November.

Two more 500-bed station hospitals were added to the concentration in the Naples area by the end of the Winter Line campaign. These were the 103d, which opened a convalescent hospital in an Italian villa on 5 January, replacing the 3d Convalescent, which had gone into the combat zone; and the 52d, which opened in school buildings on 17 January. The 103d added the facilities of a regular station hospital, sited in school buildings a few blocks from its convalescent establishment, on 13 January.

All hospitals in the Naples area faced problems of reconstruction and renovation. Even those sited in hospital buildings found a heritage of indescribable filth to be cleaned out before they could operate. Initial cleaning and minor remodeling were usually accomplished by hospital personnel; the Chemical Warfare Service was available for disinfecting the premises. More extensive repairs to bomb-damaged buildings, such as those on the fairgrounds, were made by the Army engineers, often after the hospital was in operation.

By mid-January 1944, hospitals of the medical center were functioning on a partially specialized basis. The 182d Station, in addition to its general beds, operated a venereal disease section that ultimately reached a capacity of 1,200 beds. The 45th General was designated as the neuropsychiatric center for the Peninsular Base Section.

While all hospitals took British pa-


Civitavecchia
ROME
Termoli
San Severo
Foggia
Anzio
Caserta
Naples
Cerignola
Bari
Lavello
Spinazzola
Battipaglia
Erchie
Manduria
Lecce
0 50 MILES
0 50 KILOMETERS
Sparanise
Caiazzo
Volturno R.
Dugenta
Caserta
San Leucio
Maddaloni
Aversa
Naples
Pomigliano Airfield
0 10 MILES
0 10 KLMS
JAS

MAP 29—Fixed Hospitals in Southern Italy, October 1943–October 1947

FIXED HOSPITALS IN SOUTHERN ITALY

Lecce

4th Field, 1st Platoon (AAFSC), 15 March–15 May 1944. 100 beds.

35th Field, 3d Platoon (AAFSC, ABC), 15 May 1944–16 April 1945. 100 beds.

Erchie

35th Field (AAFSC), 15 December 1943–15 May 1944. 400 beds.

35th Field, 1st and 2d Platoons (AAFSC), 15 May–11 November 1944. 200 beds.

35th Field, 1st Platoon (AAFSC, ABC), 11 November 1944–24 May 1945. 100 beds.

Manduria

4th Field, 1st Platoon (AAFSC), 26 November 1943–15 March 1944. 100 beds.

Battipaglia

32d Field, 1st and 2d Platoons, 23 October 1943–13 February 1944. 200 beds.

32d Field, 13 February–23 July 1944. 400 beds.

154th Station, 23 July–6 September 1944. 150 beds.

59th Evacuation (as station), 16–27 July 1944. 750 beds.

Bari

26th General (AAFSC, ABC), 4 December 1943–21 June 1945. 1,000/1,500 beds.

45th General (ABC), 21 June–26 September 1945. 1,500 beds.

Spinazzola

34th Field, 1st Platoon (AAFSC, ABC), 15 February 1944–5 June 1945. 100 beds.

Lavello

4th Field, 1st Platoon (AAFSC, ABC), 15 May 1944–3 June 1945. 100 beds.

Cerignola

34th Field (AAFSC), 13 December 1943–15 February 1944. 400/200 beds.

34th Field, 2d and 3d Platoons (AAFSC, ABC), 15 February 1944–15 June 1945. 200 beds.

4th Field, 2d Platoon, 16 June–10 July 1945. 100 beds.

Naples-Caserta Area

118th Station, Naples, 14 October 1943–20 May 1945. 500 beds.

4th Field, 2d and 3d Platoons, Pomigliano Airfield, 16 October 1943–12 January 1944. 200 beds.

106th Station, Naples, 17 October 1943–24 May 1945. 500 beds..

182d Station, Medical Center, 19 October 1943–25 March 1945. 500 beds.

32d Field, 3d Platoon, Pomigliano Airfield, 26 October 1943–13 February 1944. 100 beds.

FIXED HOSPITALS IN SOUTHERN ITALY—*Continued*

36th General, Caserta, 3 November 1943–20 July 1944. 1,000/2,000 beds.
225th Station, Medical Center, 10 November 1943–26 March 1945. 500 beds.
17th General, Naples, 11 November 1943–25 October 1945. 1,000/1,500 beds.
300th General, Naples, 16 November 1943–31 March 1946. 1,000/2,000 beds.
23d General, Medical Center, 17 November 1943–26 September 1944. 1,000/2,000 beds.
70th Station, Naples, 25 November 1943–19 September 1944. 500 beds.
262d Station, Aversa, 27 November 1943–10 June 1945. 500 beds.
74th Station, Piana di Caiazzo, 7 December 1943–25 October 1944. 500 beds.
21st General, Medical Center, 29 December 1943–26 September 1944. 1,000/2,000 beds.
45th General, Medical Center, 1 January 1944–9 June 1945. 1,000/1,500 beds.
66th Station, Dugenta, 3 January–5 June 1944. 250 beds.
103d Station, Naples, 5 January–22 December 1944. 500 beds.
52d Station, Naples, 17 January 1944–3 May 1945. 500 beds.
9th Evacuation (as general, in support of FEC), Medical Center, 28 January–6 August 1944. 750 beds.
53d Station, Medical Center, 1 February–5 June 1944. 250 beds.
58th Station, Pomigliano Airfield, 3 February–5 June 1944. 250 beds.
43d Station, Caserta, 13 February–1 May 1944. 250 beds.
32d Station, Caserta, 15 February 1944–20 July 1945. 500 beds.
73d Station, Caserta, 24 February–15 June 1944. 500 beds.
64th General, Maddaloni, 17 March–18 July 1944. 1,000/1,500 beds.
51st Station, Naples, 13 May–20 September 1944. 250/500 beds.
3d General, San Leucio, 14 May–14 September 1944. 1,000/1,500 beds.
78th Station, Maddaloni, 14 May–31 August 1944. 500 beds.
37th General, Medical Center, 15 May 1944–10 April 1945. 1,000/1,500 beds.
81st Station, Naples, 16 May–24 September 1944. 500 beds.
27th Evacuation (as station), Maddaloni, 22 May–28 July 1944. 750 beds.
300th General, Detachment A, Dugenta, 5 June–19 July 1944. 250 beds.
34th Station, Dugenta, 19 July–19 October 1944; Piana di Caiazzo, 25 October 1944–3 January 1945. 250 beds.
154th Station, Piana di Caiazzo, 3 January–31 August 1945. 150 beds.
21st Station, Naples, 16 April–23 July 1945. 500 beds.
35th Field, 3d Platoon, Aversa, 10 June–1 October 1945. 100 beds.
35th Field, 1st and 2d Platoons, Sparanise, 8 July–17 September 1945. 200/100 beds.
300th General, Detachment A, Caserta, 21 July–1 November 1945. 500 beds.
300th General, Detachment B, Aversa, 1 October–1 November 1945.
392d Station, Naples, 1 June 1946–15 January 1947. 200 beds.

Foggia

61st Station (AAFSC, ABC)[a], 4 December 1943–15 November 1945. 500 beds.
55th Station (AAFSC, PBS)[b], 13 December 1943–10 August 1944; 15 November 1945–22 April 1947. 250/100 beds.

Termoli

4th Field, 3d Platoon (AAFSC, ABC), 15 May 1944–24 May 1945. 100 beds.

San Severo

4th Field, 2d and 3d Platoons (AAFSC), 18 January–15 May 1944. 200 beds.
4th Field, 2d Platoon (AAFSC, ABC), 15 May 1944–22 June 1945. 100 beds.

Anzio

59th Evacuation (as station), 7 June–10 July 1944. 750 beds.

Rome

33d General, 21 June–24 September 1944. 1,500 beds.
12th General, 22 June–12 November 1944. 2,000 beds.
6th General, 30 June–22 December 1944. 1,500 beds.
114th Station, 5 July–28 September 1944. 500 beds.
73d Station[c], 5 July 1944–18 June 1945. 500 beds.
34th Station[d], 19 January 1945–9 October 1947. 250/100 beds.
40th Station, 28 April–21 July 1945. 500 beds.
37th General, Detachment A, 21 July–1 October 1945. 500 beds.

Civitavecchia

105th Station, 5 July–13 September 1944. 500 beds.
154th Station, 14 September–17 December 1944. 150 beds.

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[a] Assigned in place from ABC to PBS, 15 October 1945.

[b] Air Forces unit during first Foggia period; reassigned to Air Forces about 1 January 1946. Reorganized as 100-bed unit and reassigned to PBS, 31 May 1946.

[c] Assigned Rome Area, MTOUSA, 1 December 1944–25 May 1945.

[d] Assigned Rome Area, MTOUSA, 25 May 1945.

tients and those in Naples proper treated civilians when emergency required, an effort was made to funnel patients from the French Expeditionary Corps to the 182d and 225th Station Hospitals, where French-speaking personnel were available. Both of these hospitals were largely filled with French and French colonial casualties during January. Many problems arose as a result, particularly at the 225th, where bearded African goumiers made turbans for themselves out of hospital towels and changed identification tags with each other in order to exchange beds.

Late in January the 9th Evacuation Hospital moved over from Sicily and opened in the medical center as a general hospital for French troops, remaining until the beginning of August when the unit began staging for southern France. Liaison personnel from the French Army were attached to handle discipline, mail, pay, and other administrative matters, while French and Arab noncomissioned officers served as interpreters.

Installations attached to the medical center by the end of January 1944 included three general and two station hospitals and an evacuation hospital acting as a general, with an aggregate Table of Organization strength of 4,750 beds; the 4th Medical Depot Company; a central dental laboratory; the 15th Medical General Laboratory, which began operating a blood bank late in February;[8] the 41st Hospital Train; and the 51st Medical Battalion. By this date the center was fully organized, although the 6744th Medical Center (Overhead) was not formally activated until 10 February 1944. Consisting of four officers and 20 enlisted men, the medical center headquarters group was responsible for functions common to all the hospitals in the area, such as allocation of space, maintenance of roads and utilities, sanitation, security, transportation, civilian labor, and recreation. Included among the service units operating under the medical center organization were a finance disbursing section, an Army post office, a Quartermaster shower and sterilization unit, a laundry, a fire-fighting platoon, a message center, and a telephone switchboard. The center headquarters also controlled the staging area for medical units. Although it resembled the typical hospital center in its purposes, the Naples grouping was less centralized. It had no commanding officer in the proper sense of the word. Colonel Jeffress, former surgeon of the Atlantic Base Section, was responsible for administering the overhead functions, but the medical service as such, including the assignment of patients, was directly under the base surgeon.[9]

In addition to the center, there were 4,500 Table of Organization beds elsewhere in Naples by the close of the Winter Line campaign. The 12th General Hospital and the 32d Station were also staging at the Mostra Fairgrounds, but were not in actual operation. Throughout the Italian campaign personnel and equipment of units in the process of staging were freely used to augment facilities of operating hospitals, in accordance with the practice established early in the North African campaign.

Other PBS Hospitals—When Fifth Army medical units moved across the

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[8] See pp. 352–53, below.

[9] Unit Rpts, 6744th Med Center (Ovhd), 6 Nov 44 and 15 Jun 45.

Volturno to support the Winter Line campaign, their places in the Caserta area were taken by fixed hospitals assigned to the base section. The 36th General was the first of these, opening on 3 November in an Italian military hospital in Caserta. Here, as in Naples, the buildings and the Italian patients hospitalized in them were unbelievably filthy. At this time the front lines were so near that the 36th General took casualties directly from battalion aid stations. An Italian hospital at Aversa, six or eight miles nearer the coast, served to house the 262d Station from 27 November. The 66th Station, a 250-bed unit, opened on 3 January in a prisoner-of-war enclosure south of Caserta, where it also operated a venereal disease hospital.

Closest of any fixed hospital to the front during the Winter Line campaign was the 74th Station, which opened at Piana di Caiazzo north of the Volturno on 7 December. Housed in the stone buildings of a co-operative farm, with supplementary tentage, the 74th performed routine station hospital functions for troops resting and staging in the area. The primary problem there was knee-deep mud, which required the construction and constant maintenance of access roads. Two platoons of the 32d Field Hospital performed similar services for troops still in the Salerno-Paestum area, while the remaining platoon served as a holding hospital for air evacuation at Pomigliano Airfield northeast of Naples. Two platoons of the 4th Field shared the load at Pomigliano until early January, when they were assigned to the Air Forces.

Virtually all fixed hospitals under control of the Peninsular Base Section were operating in excess of their Table of Organization capacities, employing Italian civilians to make up for personnel shortages.[10]

Hospitalization for Army Air Forces in Italy

Following the October 1943 agreement between General Blesse for NATOUSA and Colonel Elvins for the Army Air Forces, hospital units of various types were designated to serve the USAAF in Corsica, Sardinia, and Italy. Those initially scheduled for Italy were the 26th General, the 55th and 61st Station, and the 4th, 34th, and 35th Field Hospitals. All were located south of Naples, and on the Adriatic side of the peninsula.[11]

Only the 1st Platoon of the 4th Field Hospital was able to open at full bed strength and at the appointed time. This unit was located at Manduria in the heel of the Italian boot. Equipment of all the other Air Forces hospitals was aboard the Liberty ship *Samuel J. Tilden*, which was destroyed in an enemy air attack on Bari harbor on the night of 2 December. Replacement equipment for the field hospitals and for the 250-bed 55th Station Hospital was flown from Palermo within ten days, but the 500-bed 61st Station and the 1,000-bed 26th General had to wait for slower replacement by water. The 26th General, while it actually opened at Bari on 4 December, did so with only 100 borrowed beds. Its quarters were the spacious modern buildings of an Italian military hospital. The 61st Station, until its own equipment arrived in January, operated an American ward in a British hospital at Foggia, using British equipment. The 55th Station opened at Foggia and the 34th Field a few miles southeast, at Cerignola, on 13 December. The 35th Field began taking patients at Erchie, near the site of the 4th, two days later. The remaining two platoons of the 4th Field Hospital opened at San Severo, south of Cerignola, on 18 January.

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[10] See app. A–5.

[11] The chief sources for this section are: (1) Hist, Twelfth Air Force Med Sec, 1942–44; (2) Med Hist, Fifteenth Air Force, 1944; (3) Annual Med Hist, AAFSC MTO, 1944; (4) Link and Coleman, *Medical Support of the Army Air Forces in World War II*, pp 455–73; (5) Unit rpts of the individual hosps mentioned in the text.

Originally assigned to the Twelfth Air Force, these hospitals also served the Fifteenth Air Force, which was activated on 1 November 1943 before any of the medical units were in operation. All were transferred to the newly created Army Air Forces Service Command, Mediterranean Theater of Operations, early in the new year.

There were some changes in the location of field hospital platoons in February and again in May 1944, but all remained south of the latitude of Rome, on the Adriatic side of the peninsula. The only significant change was the release of the 55th Station Hospital to PBS on 10 August. This hospital had been operating near Foggia since December 1943, but the enlargement of the 26th General Hospital at Bari to 1,500 beds rendered the 55th Station surplus to Air Forces needs. All field hospital units and the 61st Station at Foggia operated on a 30-day policy, with evacuation to the 26th General. The latter installation operated on a 90-day policy.

Reorganization of Fixed Hospitals

When General Stayer succeeded General Blesse as Surgeon, North African Theater of Operations, on 1 March 1944, the theater was already 8,000 beds short of the authorized ratio of 6.6 percent of troop strength, with new troops arriving faster than beds. Stayer's first major problem, with which Blesse had been struggling for several months, was that of substantially increasing the number of fixed beds in the theater.[12]

The problem had been under discussion, both in the theater and in Washington, for a considerable time, but the build-up for OVERLORD precluded the diversion of either beds or medical personnel to the Mediterranean. It was first suggested toward the end of 1943 that the shortage might be overcome by a more economical use of personnel already in the theater. More or less detailed plans for enlarging certain general hospitals to 1,500- and 2,000-bed capacity with personnel released by the inactivation of a few 250-bed station hospitals were drawn up in The Surgeon General's Office in January 1944. No positive action was taken, however, until after a request to increase the bed ratio for the North African theater to 8.5 percent was denied in March. By that time the deficiency had risen to 10,000 beds and action had become imperative. Tentative Tables of Organization for 2,000-bed and 1,500-bed general hospitals were issued on 19 April 1944, and the reorganization went into effect on 5 June.[13]

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[12] (1) Ltr, Gen Blesse to TSG, 6 Feb 44. (2) Ltr, TSG to Gen Stayer, 18 Apr 44.

[13] (1) Pers Ltr, Col A. B. Welsh, Dir, Plans Div, SGO, to Blesse, 23 Jan 44. (2) Pers Ltr, TSG to Stayer, 18 Apr 44. (3) Cables, Devers to AGWAR, 14 Jan 44; Marshall to Devers, 20 Jan 1944; Devers to WD, 23, 26 Mar 44; Marshall to Devers, 7 Apr 44; Devers to WD, 24 May 44. (4) Smith, *Hospitalization and Evacuation, Zone of Interior*, p. 226.

Six 250-bed station hospitals—the 43d, 53d, 58th, and 66th in Italy; and the 64th and 151st in North Africa—were inactivated. Five general hospitals—the 12th, 21st, 23d, 36th, and 300th, all in Italy—were expanded from 1,000 to 2,000 beds; and the remaining twelve general hospitals in the theater were expanded from 1,000 to 1,500 beds. Each of the new 2,000-bed units absorbed the personnel and equipment of one of the inactivated hospitals, with suitable transfers and readjustments to bring all the enlarged units into line with the new Tables of Organization, which were somewhat modified in July. The completed reorganization added 9,500 T/O fixed beds to the theater total. General hospitals in Italy began enlarging their facilities by new construction, by conversion of additional building space, or by erection of tentage a month or more before the reorganization went into effect. The 21st, 23d, 36th, and 300th General Hospitals, for example, had already expanded to 3,000 beds each by 31 May, or 50 percent above their new Table of Organization capacities.[14]

Aside from this general reorganization, a few minor changes were made to bring hospital facilities into line with needs. The 60th Station Hospital at Cagliari, Sardinia, was formally increased from 250 to 500 beds, confirming the actual operating status of the installation. The 51st Station, which had been functioning as a neuropsychiatric hospital, was also confirmed as a 500-bed unit in July. The 79th Station Hospital, which was no longer needed in Algiers after the decision to transfer Allied Force Headquarters to Italy, was inactivated on 30 June, and its personnel and equipment were absorbed by other units. The provisional hospital at Marrakech, Morocco, which had been operated primarily by personnel of the 56th Station at Casablanca since May 1943, was reorganized as the 370th Station Hospital, with a Table-of-Organization strength of 25 beds.

Expansion of the Peninsular Base Section

Throughout the Anzio Campaign, the stalemate before Cassino, and the drive to Rome, the build-up of fixed hospitals in the Naples and Caserta areas continued. In February 1944 the 250-bed 53d and 58th Station Hospitals set up in Naples, where the former took over operation of the venereal disease hospital in the medical center from detached personnel of the 12th General, the latter operating the air evacuation holding hospital at Pomigliano Airfield. At the same time the 32d, 43d, and 73d Station Hospitals—the 43d of 250 beds, the others of 500—moved into the Caserta area, where they were followed by the 64th General in March. All of these hospitals were brought over from North Africa.

There were no new arrivals in April, but the opening of the drive to Rome brought a new contingent in May. The 37th General moved into the medical center, while the 51st and 81st Stations set up outside the center in Naples proper. The 51st Station was designated the neuropsychiatric hospital for the Naples area. The 81st took casualties from the French Expeditionary Corps.

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[14] (1) Annual Rpt, Med Sec, MTOUSA, 1944, an. B. (2) Med Sit reps, PBS, 31 May 44. (3) Annual Rpts, 1944, of the individual hosps concerned.

The 3d General and the 78th Station moved into the Caserta area. Before the end of the month the 750-bed 27th Evacuation Hospital, a new arrival from the zone of interior tabbed for an ultimate role with Seventh Army in France, was established at Maddaloni to act as a general hospital for French and French colonial troops. The unit was soon operating 1,500 beds.

During the periods of heavy pressure—in February and March in connection with the Anzio Campaign, and in May during the assault on the Gustav Line—most of the hospitals in the base section operated at approximately twice their Table of Organization capacities, with station hospitals often acting as generals. Prefabricated buildings and tents were usually used for expansion where the buildings occupied were inadequate. Additional personnel were obtained by hiring Italian civilians and by drawing upon hospital ship platoons, other hospitals staging in the area or awaiting assignment, and medical battalions. The 164th and 181st Medical Battalions, both Seventh Army units, served PBS in various capacities from late May until their release in mid-July to train with the invasion forces. The 70th Station at Naples and the 74th at Piana di Caiazzo, near Caserta, performed normal station hospital functions for troops in their respective areas. The 70th also handled all hospitalization for the Women's Army Corps until May. The 182d Station in the medical center was designated in July for Brazilian personnel, who were staging in the area. Brazilian medical officers, nurses, and enlisted wardmen were attached.

In the reorganization of June, the 23d General Hospital absorbed the 53d Station, taking over the venereal disease hospital and the disciplinary wards. The 21st General absorbed the 58th Station, including operation of the Pomigliano Airfield holding hospital, and the 300th General took over personnel and equipment of the 66th Station. The 300th continued to operate the prisoner-of-war hospital at Dugenta, which had been the responsibility of the 66th since January. The POW hospital was later turned over to the 34th Station, which arrived from Palermo in July. The 43d Station was merged with the 36th General, which closed at Caserta in July, releasing its quarters for occupancy by elements of theater headquarters, including the SOS medical section. Pending reassignment, personnel of the 36th were put on detached service with other hospitals in the medical center.

The general forward movement of PBS installations began in June. The 59th Evacuation, brought over from Sicily, acted as a station hospital at Anzio between 7 June and 10 July, handling 1,825 admissions in that period. The 59th then served for another two weeks at Battipaglia, where Seventh Army was in training for the invasion of southern France. The 6th, 12th, and 33d General Hospitals all opened in Rome before the end of June and were joined there on 5 July by the 73d and 114th Stations. All of these units came direct from Africa except the 73d, which had been operating at Caserta, and the 12th General, which had been inactive in Naples for six months while its personnel served on detached duty with other hospitals. The previously organized Rome Area Command—Rome Allied Area Command after 1 July 1944—had supervision over the health of the city, but the U.S. hospitals remained under the jurisdiction of the Peninsular Base Section.[15]

The 12th General Hospital, now a 2,000-bed unit, had absorbed the personnel and equipment of the 151st Station, brought over from Africa for the merger. Like those in Naples and Caserta, all of the fixed hospitals moving into the Rome area were sited in permanent buildings. The 6th General occupied the Institute of the Good Shepherd, where the 56th and 94th Evacuation Hospitals had already done the necessary renovation.[16] The 33d General and the 114th Station, the latter designated as neuropsychiatric hospital for the Rome area, were also in Italian hospital plants, while the 12th General and the 73d Station occupied Italian military structures. The 7th Medical Depot Company accompanied the fixed hospitals into Rome.

Movement north of Rome was almost simultaneous with the establishment of hospitals in the Italian capital. The 105th Station Hospital opened at Civitavecchia on 5 July; and the 50th, one of the few 250-bed station hospitals remaining in the theater, opened at Castagneto, on the coast a few miles north of Piombino, on 20 July. The unit was so close to the front for several days that it took patients direct from the clearing stations, thus functioning in effect as an evacuation hospital.

The 24th General Hospital from the Eastern Base Section in North Africa went into bivouac in Rome on 20 June, its personnel serving on detached service with other hospitals for a month. On 21 July the 24th General opened as a 1,500-bed unit at Grosseto, in the buildings of a tuberculosis sanatorium previously occupied by the 15th Evacuation Hospital. At the end of the month the 64th General Hospital moved from Caserta to Leghorn, where it opened in a former Fascist paratroop school adjacent to the 16th Evacuation Hospital in the suburb of Ardenza. The 55th Station, released at Foggia by the Air Forces, was attached to the 64th General early in August and was established at the same Ardenza site. Leghorn was still within range of German guns when the 64th General began taking patients in that city.

As of 15 August 1944, PBS had 28,900 T/O beds in operation, of which 15,000 were in Naples—8,000 in the medical center—6,000 were in Rome, and 4,000 were north of Rome. Between 14 October 1943, when the first fixed hospital opened in Naples, and the end of August 1944, PBS hospitals admitted 282,000 patients and returned 214,000 of them to military duty. (*Tables 17, 18*)

Decline of North African and Island Bases

As the center of activity in the Mediterranean moved up the Italian peninsula, North Africa decreased in importance as a communications zone. The expansion of the Peninsular Base Section was accomplished largely by stripping the African base sections of hospital facilities. As of 15 August 1944, the Eastern Base Section was left with only one 250-bed station hospital, the 54th at Tunis. The Mediterranean Base Section retained 3,000 beds, 2,500 of them in the hospital groupment at Assi Bou Nif, where the 70th General and the 23d and 69th Station Hospitals were still located. The others were the 250-bed 57th Station near Constantine and the 250-bed

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[15] Annual Rpt, Surg, Rome Area Comd, 1944.

[16] See p. 304, above.

Table 17—Admissions to PBS Hospitals, 14 October 1943–31 August 1944

Month	U. S. Army			U.S. Navy	Allied	Enemy	Other	Total
	Disease	Injury	Wounds					
Total	170,950	25,657	46,452	2,201	26,305	6,850	3,408	281,823
1943								
October-December	28,594	4,123	7,911	111	2,274	170	302	43,485
1944								
January	19,994	2,422	3,898	247	2,818	113	165	29,657
February	15,984	1,656	6,292	282	947	614	167	25,942
March	15,261	1,889	3,318	296	882	185	118	21,949
April	12,500	1,879	1,423	220	598	50	111	16,781
May	14,211	2,528	8,360	134	7,232	1,393	209	34,067
June	15,344	3,644	6,760	118	4,029	1,680	374	31,949
July	26,077	4,479	5,544	327	4,714	1,031	1,169	43,341
August	22,985	3,037	2,946	466	2,811	1,614	793	34,652

Source: Annual Rpt, Surg, PBS, 1943, 1944.

Table 18—Disposition of Patients in PBS Hospitals, 14 October 1943–31 August 1944

Disposition	U.S. Army			U.S. Navy	Allied	Enemy	Other	Total
	Disease	Injury	Wounds					
Total admissions	170,950	25,657	46,452	2,201	26,305	6,850	3,408	281,823
Returned to duty	145,495	18,260	27,485	1,599	15,343	2,614	2,828	213,624
Died	97	193	221	17	139	75	74	816
Evacuated	14,960	3,451	11,937	337	9,999	2,663	288	43,635
Remaining	10,398	3,753	6,809	248	824	1,498	218	23,748

Source: Annual Rpt, Surg, PBS, 1943, 1944.

29th Station at Algiers. The Atlantic Base Section retained 275 beds, 250 in the 56th Station Hospital at Casablanca, and 25 in the 370th Station serving primarily Air Forces units at Marrakech. The total number of U.S. Army Table of Organization beds in all of North Africa was thus only 3,525.

Hospitals in MBS still held a few long-term patients from Italy, but for the most part the function of the fixed hospitals in Africa after June 1944 was that of hospitalizing military personnel still in the area. In addition, these hospitals cared for transient French patients en route from Italy to French hospitals in Africa and for U.S. patients en route to the zone of interior. Those principally served were Air Forces and naval personnel and service troops in the vicinity of Oran.

The Island Base Section in Sicily was closed out on 1 July 1944. At that date, 600 beds remained under the control of the Allied garrison on Sardinia, and 1,550 were charged to the Northern Base Section on Corsica.

Hospitalization of Prisoners of War

The one exception to the contraction of medical facilities in North Africa was installations for the care of prisoners of war. Until the Arno River line was stabilized, the bulk of the prisoners taken in Italy were transferred to enclosures in North Africa. These were gradually concentrated in the Mediterranean Base Section in the vicinity of Oran.[17]

So far as Italian prisoners were concerned, the problem became less and less important as time went on. With Italy enjoying a cobelligerent status, few new prisoners were taken. Those held over from the Tunisia Campaign and from operations in Sicily were organized into service units of various types, scattered throughout numerous camps and enclosures. The bulk of them, estimated as about 70,000, were concentrated near the centers of Army service activities, which remained in Oran, and in Algiers until the removal of AFHQ in July. By that date the 7029th Station Hospital (Italian), in prisoner of war Enclosure 129 at Ste. Barbe-dú-Tlelat near Oran, was able to care for most of the Italian prisoner patients. The 43d and 46th General Hospitals in the nearby Assi Bou Nif groupment had taken malaria cases from the prison camp until the departure of those units in June and July, respectively. The 250-bed 7550th Station Hospital (Italian), which had been activated in EBS in March 1944, was moved to POW Enclosure 129 at the end of May but was never re-established as an active unit. The 7393d Station Hospital (Italian) continued for a time to operate 25 beds in conjunction with the 56th Station Hospital at Casablanca.

On the other hand, the German prisoner of war hospital in POW Enclosure 131, also at Ste. Barbe-du-Tlélat, expanded rapidly as the fortunes of war brought a steady stream of German prisoners into Allied hands. Originally set up late in 1943 as a 500-bed unit, the hospital was caring for more than 2,000 patients by July 1944. The limits were fixed by the availability of German medical personnel, who were never taken in large enough numbers to care for all of their own wounded.

The most important prisoner of war enclosure in Italy during the early part of 1944 was Number 326 at Dugenta in the Caserta area. In January the 66th Station Hospital was established in the enclosure. Shortly after the 66th was absorbed by the 300th General Hospital, the 34th Station took over the task of caring for sick and wounded German prisoners in the Dugenta camp. The hospital—a former Italian disciplinary barracks—consisted of cottage-type buildings, prefabricated structures, and ward tents, the whole complex being surrounded by a high brick wall with sentry towers. The 34th inherited from the 66th both civilian workers and German medical corpsmen. During the Rome-Arno and Southern France Campaigns, the hospital census fluctuated between 300 and 500 daily, with 90 to 98 percent of the cases surgical. Evacuation was to the prisoner of war stockade or to the zone of interior. The repatriation of the incapacitated and long-term hospital cases on an exchange basis began in May.[18]

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[17] This section is based primarily on the following documents: (1) Annual Rpt, Med Sec, MTOUSA, 1944; (2) Hist of 7029th Station Hosp (Italian), 27 Jul 45; (3) Annual Rpt, Med Sec, 2686th POW Administrative Co (Ovhd), 1944; (4) Ltr, Col A. J. Vadala to Surg, NATOUSA, 29 May 44, Sub: Adequacy of Med Serv for Italian POW's in MBS; (5) Ltr, Col Shook, Surg, SOS NATOUSA, to Surg, NATOUSA, 3 Jun 44, Sub: Rpts on Med Serv in Italian POW Camps; (6) Annual Rpt, 34th Station Hosp, 1944.

The 6619th Prisoner of War Administrative Company was in charge of prisoner of war Enclosure 326 until 11 August 1944, when it was relieved by the 2686th POW Administrative Company, brought over from Africa. These POW administrative companies each had a small medical section that supervised infirmary service by protected personnel in the camp.

With the breakthrough of the Gustav Line, the capture of Rome, and the battle of pursuit to the Arno, the number of German prisoners taken increased substantially, and additional hospitals were designated to share the load with the Oran and Dugenta facilities. The 78th Station Hospital at Maddaloni took prisoners from its opening in mid-May, and by June was almost exclusively a prisoner of war hospital. POW admissions were in the neighborhood of 700 a month, the bulk of them surgical. When the 78th Station closed to admissions late in August, the 262d Station at Aversa became a POW hospital, admitting more than 1,100 German prisoners in the last ten days of the month.[19] Fixed hospitals in Rome and north of that city took prisoner patients along with U.S. and Allied casualties as they were brought in.

From less than 2,000 prisoners of war in hospitals under U.S. control at the end of January 1944, the census climbed to a peak for the year of 5,288 at the end of August. More than 1,600 of these were in PBS hospitals.[20]

Evacuation

Fixed hospitals in the Peninsular Base Section operated throughout the period of the Volturno and Winter Line campaigns on a 30-day evacuation policy, all patients with longer hospital expectancy being sent to North Africa by sea or air as soon as they were transportable. Bed status in PBS hospitals, and the number of patients awaiting evacuation, were reported daily by telegraph to the Surgeon, NATOUSA, who requested the Chief of Transportation, AFHQ, to provide hospital ships. Air evacuation continued to be controlled by the theater air surgeon, but close liaison with the base section was maintained. Patients to be evacuated were classified in PBS, so that those requiring special treatment

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[18] (1) Undated British doc, signed H. W., Sub: Exchange of Allied and German Sick and Wounded POW's for Repatriation, Col Standlee's copy. (2) Memo, Maj Gen F. C. Beaumont-Nesbitt, Chief, Liaison Sec, AFHQ, to CofS, French Ground Forces, 3 Jun 44.

[19] (1) Med Sitreps, PBS, May–Aug 44. (2) ETMD's 78th Station Hosp, May–Jul 44. (3) ETMD, 262d Sta Hosp, Aug 44. (4) Annual Rpts, 78th and 262d Sta Hosp, 1944.

[20] (1) Annual Rpt, Med Sec, MTOUSA, 1944, an. B, app. 17. (2) Med Sitrep, PBS, 16–31 Aug 44.

PLACING GERMAN POW'S ABOARD THE SWEDISH EXCHANGE SHIP GRIPSHOLM *for repatriation. These cases have a long hospital expectancy.*

could be routed promptly to the hospital best equipped to handle the case.[21]

After the activation of PBS, only one U.S. hospital ship, *Shamrock,* was available for evacuation from Italy to Africa for the rest of the year, but occasional lifts were obtained from British vessels. Since air evacuation was exclusively to the Tunis-Bizerte area, hospital ships were routed to Oran. The port of embarkation was the Paestum beaches until 8 October, the port of Salerno between 8 and 25 October, and thereafter the port of Naples. Two other U.S. hospital ships in the Mediterranean, *Acadia* and *Seminole,* were used during the period primarily for evacuation from North Africa to the zone of interior.

Air evacuation from the Naples area was handled by the 802d Medical Air

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[21] Principal sources for this section are the following: (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Annual Rpt, Med Sec, MTOUSA, 1944; (3) Annual Rpts, Surg, PBS, 1943, 1944; (4) Med Hist, 802d MAETS, 1942–44; (5) Med Hist, 807th MAETS, 1944; (6) ETMD's for Oct 43 through Aug 1944.

Evacuation Transport Squadron, with the 807th MAETS evacuating from Foggia, Bari, and more southerly fields. The latter unit evacuated for the most part personnel of the British Eighth Army, with a sprinkling of U.S. Air Forces casualties. Routes from Naples differed with the time of day, some flights going direct to North Africa, others making an overnight stop at Palermo in Sicily.

During the period between 2 January, when orders were issued for the Anzio landings, and 22 January when the assault troops went ashore, a determined effort was made to evacuate as many patients as possible from the Naples area to provide beds for the new operation. Two British hospital ships and two British personnel carriers were diverted to assist with the evacuation.[22] Between 9 September, when the Salerno landings took place, and 21 January, the eve of the Anzio landings, a total of 19,048 patients had been evacuated from Italy by air and 13,017 by water, or 32,065 in all. (*Table 19*) After the middle of October, most of these patients cleared through fixed hospitals assigned to PBS.

For the first six months of 1944, long-term patients continued to be evacuated from Italy to North Africa. By the end of June, however, the build-up of facilities in the Peninsular Base Section at the expense of the declining North African bases had proceeded so far as to permit retention of all U.S. patients in Italy on a 90-day policy, which was extended to 120 days after 15 August. As long as French troops remained in Italy, French patients requiring more than 30 days hospitalization were sent to the 9th Evacuation Hospital or were evacuated to French hospitals in Africa.[23]

Air evacuation from Italy to Africa was discontinued, except for Air Forces personnel, with the arrival of additional hospital ships in April. (*Table 20*) Air evacuation from Sicily ceased entirely with the closing out of the Island Base Section in July. After the middle of that month, evacuation from Corsica and Sardinia was directed to Naples rather than to Oran.

Within PBS itself, patients were shifted as required from one hospital to another, primarily to secure the advantages of specialization, but also on occasion to relieve congestion. After the terminus of air evacuation from the Fifth Army hospitals shifted from Naples to Rome, patients were moved periodically from the latter city back to Naples to keep from overcrowding the facilities nearer to the front. The 41st and 42d Hospital Trains, which were already in the theater, and the 66th Hospital Train, brought over from North Africa late in June, made regular runs between the two cities during July and early August.

Direct evacuation to the zone of interior by hospital ship from Naples began in April 1944. At the same time restrictions on the use of unescorted transports for evacuation from inside the Mediterranean were lifted, and these vessels began loading ZI patients at Oran as well as at Casablanca. Medical care on

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[22] Surg, NATOUSA, Journal, 22 Jan 44.

[23] Recorded Interv, ASD Berry, 4 Nov 58, commenting on preliminary draft of this volume. Dr. Berry was chief of the Surgical Service, 9th Evacuation Hospital, during the Naples period. According to French officials, there were thirty available French hospitals in North Africa, with an aggregate capacity of 20,000 beds. Surg, NATOUSA, Journal, 16 Aug 43.

TABLE 19—EVACUATION FROM ITALY TO NORTH AFRICA
9 SEPTEMBER 1943–21 JANUARY 1944

Week Ending	By Water	By Air	Total
Total	13,017	19,048	32,065
1943			
10 September	430	0	430
17 September	1,203	112	1,315
24 September	730	209	939
1 October	448	659	1,107
8 October	884	178	1,062
15 October	1,530	0	1,530
22 October	478	356	834
29 October	446	1,748	2,194
5 November	0	1,812	1,812
12 November	0	901	901
19 November	446	1,982	2,428
26 November	552	1,407	1,959
3 December	572	1,772	2,344
10 December	589	1,767	2,356
17 December	983	1,859	2,842
24 December	968	1,532	2,500
31 December	334	0	334
1944			
7 January	930	559	1,489
14 January	233	845	1,078
21 January	1,261	1,350	2,611

Source: Hq, ETOUSA, Rpt on PBS, 10 Feb 44, sec. VI, app. B.

transports was provided by hospital ship platoons. Air evacuation to the zone of interior began on a regularly scheduled basis from Casablanca on 3 July and from Naples on 19 July. The Naples flights were broken by stops at Oran and Casablanca.[24]

By 1 June seven U.S. Army hospital ships and one Navy hospital ship were available for evacuation to the zone of interior, permitting a rapid clearing out of the remaining North African hospitals in preparation for severe contraction in that area. Every effort was also made to reduce the patient load in Italy before the invasion of southern France, scheduled for 15 August. (*Table 21*)

Medical Supplies and Equipment

Theater Medical Supply

Organization for Medical Supply—Although the reorganization of the theater

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[24] Hist, Med Sec, Hq, COMZ NATOUSA, Feb–Oct 44.

TABLE 20—EVACUATION FROM ITALY TO NORTH AFRICA, JANUARY–AUGUST 1944

Month	By Water			By Air		Total
	U.S.	Allies	POW's	U.S.[a]	Allies	
Total	7,048	8,277	2,432	4,360	1,367	23,484
January	3,232	996	4	2,324	636	7,192
February	834	380	269	949	681	3,113
March	1,184	229	190	306	50	1,959
April	1,213	195	22	105	0	1,535
May	372	1,026	0	99	0	1,497
June	213	1,180	1,409	163	0	2,965
July	0	2,995	427	170	0	3,592
August	0	1,276	111	244	0	1,631

[a] Includes Air Forces personnel.

Source: Annual Rpt, Med Sec, MTOUSA, 1944, an. B, app. 20.

TABLE 21—EVACUATION FROM THE MEDITERRANEAN TO THE ZONE OF INTERIOR JANUARY–AUGUST 1944

Month	U.S. Army			Other U.S.	POW's	Total
	By Sea	By Air	Total			
Total	20,970	1,305	22,275	372	610	23,257
January	652	44	696	6	0	702
February	2,784	34	2,818	24	112	2,954
March	4,111	6	4,117	44	38	4,199
April	2,448	12	2,460	10	117	2,587
May	3,484	5	3,489	97	0	3,586
June	2,748	8	2,756	42	149	2,947
July	2,935	523	3,458	62	2	3,522
August	1,808	673	2,481	87	192	2,760

Source: Annual Rpt, Med Sec, MTOUSA, 1944, an. B, app. 21, 22.

putting all operating functions of the Medical Department within the communications zone under the Medical Section, SOS NATOUSA, was effective on 24 February 1944, it was May before the supply branch of that headquarters obtained sufficient personnel to properly carry out its assigned mission. Supply personnel in the field units were also inadequate for the type of organization in effect. The conversion of the medical supply depots in the theater into medical depot companies in December 1943 had resulted in an aggregate loss of 260 men in the four depot companies assigned to NATOUSA, while a second reorganiza-

41st Hospital Train Loading Near Riardo for Run to Naples, February 1944

tion late in June 1944 further reduced personnel by 112.[25]

In order to make more efficient use of the remaining supply officers and enlisted men, a new plan of organization was worked out as early as March 1944, whereby the 2d and 4th Medical Depot Companies would be inactivated and medical composite battalions substituted for them. This plan was proposed to the War Department by the SOS surgeon on 24 May, but approval was not received until 15 July. In the meantime, under direct orders, the two depot companies concerned, together with the 7th and 12th Medical Depot Companies, had gone through the June reorganization, and more personnel had been lost.

The latter two companies were left unchanged, but the 2d Medical Depot Company, with headquarters at Oran, was inactivated on 13 August. From the personnel thus released, the 231st Medical Composite Battalion was organized under TOE 8–500, with the 70th and 71st Medical Base Depot Companies (TOE 8–187) as components. The battalion was then assigned to the southern France operation, and the 60th Medical Base Depot Company, which had been organized a few weeks earlier, took over the NATOUSA functions previously performed by the larger organization. The 48th Medical Depot Company, based in Naples, was similarly inactivated on 15 August, being supplanted by the 232d Medical Composite Battalion with the 72d and 73d Medical Base Depot Companies as components. Personnel released from the 7th and 12th Medical Depot Companies in the June reorganization were absorbed by the two composite battalions.[26]

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[25] Sources for this section are: (1) Annual Rpt, Surg, MTOUSA, 1944, an. K; (2) Hist, Med Sec, Hq, COMZ NATOUSA; (3) Unit rpts of the med supply organizations mentioned in the text. (4) Davidson, Med Supply in MTOUSA, pp. 84–107.

In addition to providing greater flexibility, the new arrangement was designed to handle more effectively such problems as maintenance and repair, and was able to make fuller use of the Italian service companies as substitutes for larger personnel allotments. The greatest economy and efficiency in the use of personnel was essential since the 7th Medical Depot Company, like the 231st Medical Composite Battalion, was assigned to the assault force for the invasion of southern France, while the 12th Medical Depot Company remained a Fifth Army unit. The theater was thus left with only the two medical base depot companies of the 232d Medical Composite Battalion and the 60th Medical Base Depot Company at Oran to carry out all supply activities at the theater and base section levels.

Operation of the Supply System—Medical supplies were obtained in the North African Theater of Operations by direct monthly requisitions on the zone of interior. These requisitions reflected anticipated needs three months hence, in terms of expected troop strength. Supply and requirements were computed from base section inventory records, items still due on previous requistitions, shipping time, and a replacement factor estimated in terms of probable use between the date of inventory and the date of delivery. The supply objective remained a 30-day operating level plus a 45-day reserve level.[27]

In cases of urgent need supplies were sent by air, but for the most part they were delivered by the convoys, which reached the theater three times a month. The system entailed various difficulties. Ports of discharge were not always able to handle an entire convoy, and some vessels might be diverted to another port. The port of discharge, moreover, was determined by the service receiving the larger part of the cargo, which was seldom the Medical Department. Thus requisitions had to take into account a possible loss of time in transshipment.

Another difficulty lay in the computation of replacement needs. Replacement factors had been under study, both in the theater and in Washington, since October 1943. In March 1944, revised replacement factors were sent out by the War Department, differing in many respects from those previously in use. Equipment items, except for unit assemblies, had previously been calculated as a percentage of the amount in use, but were now to be estimated on the basis of troop strength, in the same manner as expendable items. Careful comparison in the theater revealed that neither new nor old replacement factors agreed with theater experience. With the concurrence of the War Department, the consumption records of the Mediterranean supply services were applied as modifying factors while the whole problem was subjected to further study. Maj. Frank C. J. Fiala, was assigned by Washington to the Supply Branch, Medical Section, SOS NATOUSA, on 23 May, along with three specially trained enlisted men, to carry out these studies.

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[26] The new medical base depot companies organized under TOE 8–187 had only about one-third as many personnel as the old medical depot companies (TOE 8–667). It was thus possible to complete the reorganization without calling upon the ZI for additional personnel.

[27] This section is based on: (1) Annual Rpt, Med Sec, MTOUSA, 1944, an. K; (2) Hist, Med Sec, Hq, COMZ NATOUSA; (3) Davidson, Med Supply in MTOUSA, pp. 84–107.

A detailed system of stock control and stock record forms was devised for the purpose of keeping accurate track of theater inventories, disbursements, receipts, and supplies on order and of the distribution of medical supplies among the base sections. Information for medical supply officers was included in a series of technical bulletins initiated by the SOS medical section in January 1944.

In addition to supplying the base sections, depots, and Air Forces service commands, and directing interbase transfers, the supply branch of the SOS medical section also screened all requisitions originating in the Allied Control Commission (ACC), filling them from theater stocks wherever possible. After May 1944 requisitions of the Joint French Rearmament Committee were similarly screened. The supply branch served as the official channel for ordering matériel from the zone of interior on behalf of both of these agencies.

The problem of maintenance and repair was particularly acute in the Mediterranean, because of a general shortage of properly trained personnel. The TOE under which the field units were reorganized in December 1943 contemplated only third and fourth echelon repair. Equipment needing more extensive overhauling was sent back to the ZI, and was usually lost to the theater. The medical composite battalions set up in August, however, included fifth echelon repair units. In addition to the repair and maintenance sections maintained at all depots, traveling maintenance teams began visiting hospitals and other medical installations, making on-the-spot repairs and instructing personnel in preventive maintenance.

Medical Supply in the Base Sections

By the beginning of 1944, medical supply for the communications zone was concentrated in two major depots. The 2d Medical Depot Company at Oran served North Africa and the Mediterranean islands, while the 4th Medical Depot Company at Naples supplied the Italian mainland. Both depots requisitioned on the zone of interior until January 1944, when the Medical Section, SOS NATOUSA, took over that responsibility and both received ZI shipments direct.[28]

The North African base sections were already in process of contraction when the Services of Supply assumed control over them on 24 February 1944. The Atlantic Base Section had been without a regular supply depot since the fall of 1943, the function being performed incidentally by the 6th General Hospital. When that installation closed station on 16 May 1944, the supply function passed to the 56th Station Hospital and was discontinued altogether on 1 Sep-

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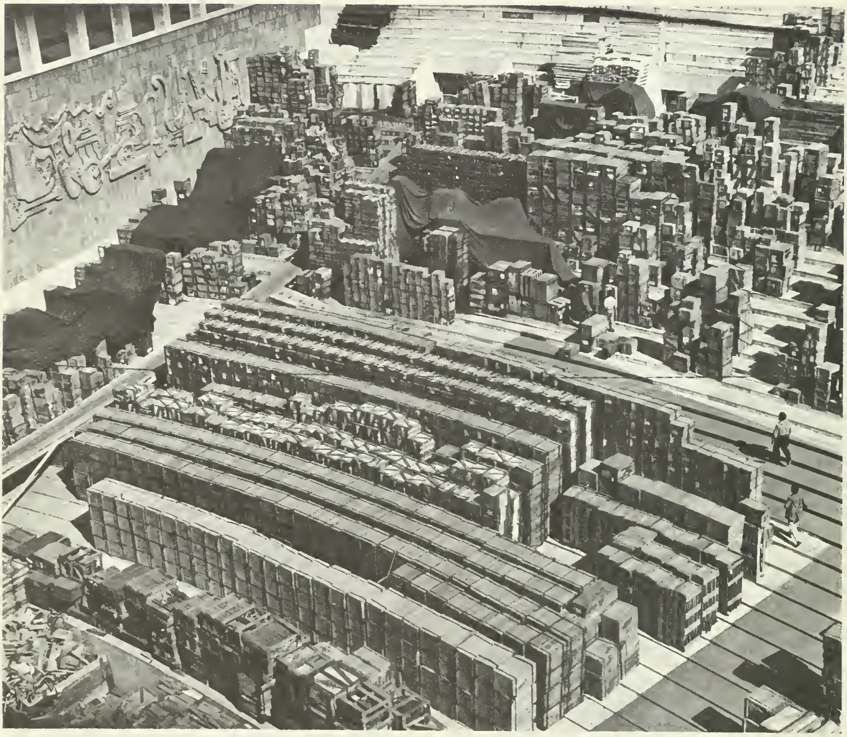
[28] Sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944, an. K; (2) Hist, Med Sec, Hq, COMZ NATOUSA. (3) Unit rpts of the various base secs and other med organizations mentioned in the text. (4) Davidson, Med Supply in MTOUSA, pp. 84–107.



Medical Supplies Stored in Amphitheater, Naples Medical Center

tember. Thereafter medical units at Casablanca and Marrakech requisitioned supplies from the Mediterranean Base Section.

In the Eastern Base Section, the 7th Medical Depot Company closed at Mateur on 12 May, transferring 1,600 tons of medical supplies to the Naples depot for PBS. After that date the 54th Station Hospital at Tunis maintained the only issue point in EBS. The medical supply section of the 6671st General Depot at Algiers also closed on 12 May, turning over the medical supply responsibility to the 29th Station Hospital. On 7 August MBS assumed direct control of supply as well as other medical services for the Center District, which passed out of existence at that time.

In Sicily, personnel of the 2d Medical Depot Company operating the Island Base Section supply depot at Palermo were transferred to Headquarters, IBS, on 10 February 1944. A provisional medical supply depot company was activated in April, being reorganized late in May as the 684th Quartermaster Base Depot Company. A supply depot for the Northern Base Section on Corsica was set up at Ajaccio on 1 March by personnel of the 7th Medical Depot Company, which established a subdepot at Cervione in May. The following month, the NORBS supply organization was assigned to the 684th Quartermaster Depot Company, which was itself transferred to PBS control when the Island Base Section was inactivated in July. The two Corsican depots were combined at Cervione in September.

In Italy, in addition to the Peninsular Base Section installations, an Adriatic Depot was formed in October 1943 to serve Air Forces and supporting troops in the Foggia-Bari area. The medical section, located at Bari, was confined to supply activities, using overstrength personnel of the 4th Medical Depot Company until 20 March 1944. On that date the Medical Section, Army Air Forces Service Command, Mediterranean Theater of Operations, took direct responsibility for the medical supply activities of the depot, under general supervision of the Medical Section, SOS NATOUSA. With rising air strength and increasing air activity, the medical section of the Adriatic Depot was enlarged and for the first time was placed under its own surgeon about 1 July. At the same time the AAFSC MTO was authorized to deal directly with the zone of interior in matters of medical supply peculiar to the Air Forces instead of going through SOS NATOUSA. By the close of the Rome-Arno Campaign the medical section of the Adriatic Depot was performing the functions of a medical base depot company.[29]

In the Peninsular Base Section proper, the 4th Medical Depot Company, at the medical center on the Mostra Fair Grounds, had responsibility for all medical supplies until June 1944, when the 7th Medical Depot Company arrived from EBS to share the load. The 7th operated depots successively at Anzio, Rome, and Civitavecchia between 11 June and 1 July. The Rome depot was turned over to the 12th General Hospital for administration, and the Civitavecchia dump was transferred to control of the 4th Medical Depot Company. On 1 July the 7th Medical Depot Company was relieved of assignment to PBS before being attached to Seventh Army. The 4th Medical Depot Company, after a week in Civitavecchia, set up a second forward base at Piombino. By the middle of July, all medical supply installations between Naples and the Volturno had been centered in the main supply base on the fairgrounds, and all other depots south of Civitavecchia had been eliminated.

Thus, coincident with the movement of AFHQ to Caserta, the whole supply system for the theater was revised. The Mediterranean Base Section was made responsible for all medical supply in North Africa, the Atlantic and Eastern Base Sections were left without stocks, and the Island Base Section was closed. Surplus stocks in MBS were used for mounting the invasion of southern France, while the Peninsular Base Section took over support of the Adriatic

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[29] (1) Annual Med Hist, AAFSC MTO, 1944. (2) MS, Hist of the Adriatic Depot, OCMH files.

Depot, the Northern Base Section, and the Allied garrison on Sardinia.

In the reorganization of 15 August, Headquarters, 232d Medical Composite Battalion, and the 72d Medical Base Depot Company remained in Naples. The detachments at Piombino and Civitavecchia were combined at the Piombino site and redesignated the 73d Medical Base Depot Company. An advance group of this company departed for Leghorn on 23 August to locate quarters for what would eventually be the major medical supply base for the theater.

Professional Services

Professional services in the Italian communications zone continued to maintain the high standards of performance established in North Africa, unaffected by changes in organization or command.

Medicine and Surgery

At the theater level, medical aspects of the medical and surgical services continued to be guided and supervised by the consultants. Both Colonel Long, Medical Consultant, and Colonel Churchill, Surgical Consultant, made frequent inspection tours of base installations and combat medical units, recommending changes in procedure and personnel wherever such changes were considered desirable.[30]

Medical Service—The medical problems of the Italian communications zone were primarily extensions of problems discussed in connection with combat activities. Infectious hepatitis was intensively studied at the 15th Medical General Laboratory in Naples.[31] The treatment of neuropsychiatric disorders was centered increasingly in the forward echelons, under general direction of the theater consultant in neuropsychiatry, Colonel Hanson, but specialized neuropsychiatric hospitals continued to be maintained in the Peninsular Base Section to give the best possible care to patients whose cure could not be effected closer to the front. These were the 51st Station Hospital, which opened in Naples in May 1944, and the 114th Station Hospital, which moved from North Africa to Rome early in July. Psychiatrists were also assigned to certain other station and general hospitals on temporary duty to care for cases that for one reason or another could not be sent to the specialized facilities. Other troublesome diseases, such as trench foot, malaria, and venereal infections were dealt with at the communications zone level primarily as problems in preventive medicine.

The only special problem worthy of note for the medical service arose as a result of the enemy bombing of Bari harbor on the night of 2 December 1943. One of the vessels destroyed had carried a quantity of mustard gas, and undetermined amounts of the gas were held in solution in oil that was floating on the water. Of the more than 800 casualties hospitalized after the raid, 628 suffered from mustard gas exposure. Sixty-nine deaths were attributed in whole or in part to this cause.[32]

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[30] This section is primarily based on: (1) Annual Rpt, Med Sec, MTOUSA, 1944; (2) Annual Rpt, Surg, PBS, 1944; (3) Annual rpts of individual med units in the theater; (4) Col. Edward D. Churchill, "Surgical Management of Wounded in Mediterranean Theater at the Time of the Fall of Rome," Bulletin, *U.S. Army Medical Department*, V, (January 1945), 58–65.

[31] ETMD for Aug 44.

Medical officers and aidmen treating the casualties were unaware of the presence of the gas, which was diluted sufficiently to be undetected by odor. In the belief that casualties covered with oil but showing no physical damage were suffering from exposure and immersion, they were wrapped in blankets, still in their oil-soaked clothing, given hot tea, and left as they were for twelve to twenty-four hours while the more urgent blast injuries and surgical cases were treated.

Those with the energy and will to clean the oil from their own bodies suffered no serious damage, but the remainder suffered varying degrees of mustard burns. Eyes began to burn about 6 hours after exposure, and were so badly swollen in 24 hours that many of the patients thought themselves blind. The first death occurred without warning 18 hours after exposure.

About 90 percent of the gas casualties were American, the bulk of them merchant seamen. Since no U.S. hospital facilities were yet available in Bari—it will be remembered that equipment for all but one of the U.S. hospitals scheduled for the area was destroyed in the bombing—casualties were hospitalized in British installations.[33]

Surgical Service—One of the more important advances in surgical management during the first year of the Italian campaign was the development of reparative surgery in the base hospitals. The concept of wound surgery as it developed at this time divided procedures into three phases. The first phase, performed in field or evacuation hospitals in the army area, included all procedures necessary to save life and limb. The second phase, called reparative surgery, took place in the general hospitals of the communications zone. The third phase, more properly called reconstructive or rehabilitative surgery, took place in the zone of interior and was designed to correct or minimize deformities and disabilities. The techniques and limits of initial surgery in the army and even the division area were well established early in the Italian campaign, but there was much still to learn about the second phase.

Expert opinion was that to achieve maximum benefits, reparative surgery must take place at the period of greatest biological activity in wound repair, between the fourth and tenth days. As described by Colonel Churchill,

> Reparative surgery is designed to prevent or cut short wound infection either before it is established or at the period of its inception. Once established, wound infection is destructive of tissue and, at times, of life. In many instances it permanently precludes the restoration of function by the most skillful reconstructive efforts. If the initial wound operation has been a complete one, wounds of the soft parts may be closed by suture on or after the fourth day. The dressing applied in the evacuation hospital is removed under aseptic precautions in an operating room of a general hospital at the base. Following closure, the part is immobilized preferably by a light

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[32] (1) Surg, NATOUSA, Journal, 21, 23, 27 Dec 1943, 2 Jan 44. (2) Theater ETMD for Dec 43, app. S. (3) Ltr, Col Alexander, Consultant, Chemical Warfare Medicine, to DMS, AFHQ, and Surg, NATOUSA, 27 Dec 43, sub: Toxic Gas Burns Sustained in the Bari Harbor Catastrophe. (4) Pers Ltr, Col Alexander to Col William D. Fleming, Med Sec, Hq, SOS ETO, 26 Dec 43.

[33] See pp. 333–34, above.

plaster, or, if this is impracticable, by bed rest. Decision to close a wound by suture is based solely on an appraisal of the gross appearance at the time of removal of the dressing.[34]

Churchill estimated that by the middle of 1944 "at least 25,000 soft part wounds" had been closed in Italy alone on the basis of gross appearance only, with satisfactory healing in 95 percent of the cases. The technique was also used for more complicated wounds, including "those with extensive muscle damage as well as those with skeletal or joint injury and penetration of the viscera."

The Naples Blood Bank—Shortly after it opened in the Naples medical center in January 1944, the 15th Medical General Laboratory was asked by the PBS surgeon, Colonel Arnest, to establish a small blood bank for emergency use in the center and elsewhere in the Naples area. Plans for a 20-bottle bank were drawn up, but before they could be implemented, the needs of Fifth Army led to substantial enlargement of the scheme. When the blood bank began operations on 23 February, its goal was 200 bottles a day, forecast as the combined requirement of Fifth Army and the Peninsular Base Section. Donors were drawn from base units, replacement depots, and personnel in the process of staging. Two thousand pints of blood were taken in March, with an aggregate by 1 May of 4,134. The blood bank meanwhile had been formally authorized. Two days before Allied troops opened the offensive that would carry them to Rome and on to the Arno, it became the 6713th Blood Transfusion Unit (Provisional), assigned to the theater but attached to the 15th Medical General Laboratory. During May 6,362 pints of blood were drawn with the assistance of the 1st Medical Laboratory, which was attached to the 15th late in April. Between 14 and 31 May, when battle casualties were heaviest, 4,685 bloods were taken, for a daily average of 260. Throughout this period the blood bank was operated by 7 officers and 36 enlisted men.[35]

Blood was carried to the Cassino front by truck and to Anzio by LST. Beginning on 24 May, whole blood was flown to the front daily. A distributing unit followed the advance of Fifth Army, met the daily blood plane and delivered the precious cargo to the hospitals where it was needed. The blood plane also carried penicillin, emergency medical supplies, and occasionally personnel.

Since the decision had been made by Colonel Churchill to keep whole blood for a maximum of only eight days, the activities of the blood bank were necessarily keyed to combat activity. The laboratory maintained a list of donors, who

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[34] Churchill, "Surgical Management of Wounded in Mediterranean Theater at Time of the Fall of Rome," Bulletin, *U.S. Army Medical Department*, V (January 1945), pp. 61–62. See also, "Developments in Military Medicine During the Administration of Surgeon General Norman T. Kirk," Bulletin, *U.S. Army Medical Department*, VII (July 1947), 623–24; Col. Oscar P. Hampton, Jr. (USAR), *Orthopedic Surgery in the Mediterranean Theater of Operations*, "Medical Department, United States Army," subseries Surgery in World War II (Washington, 1957), pp. 81–114.

[35] (1) Hist, 15th Med Gen Lab, 20 Dec 42–31 May 44. (2) 15th Med Gen Lab, Quarterly Hist Rpts, 31 Oct 44. (3) Monthly Rpts, 6713th Blood Transfusion Unit. (4) Rpt of Col Virgil H. Cornell, formerly CO, 15th Med Gen Lab, sub: Gen Lab Overseas Experiences, 29 Jan 46. (5) Brig. Gen. Douglas B. Kendrick, Jr., "The Blood Program," vol. I, *Activities of Surgical Consultants*, "Medical Department, United States Army," subseries Surgery in World War II (Washington, 1962), ch. VI.

TECHNICIANS COLLECTING BLOOD FROM WAC DONORS, *15th General Medical Laboratory, Naples medical center.*

were called when needed. The use of whole blood in forward surgery undoubtedly saved many lives in the Mediterranean Theater.

Preventive Medicine

The major problems of preventive medicine in the communications zone remained in Italy what they had been in Africa—venereal disease and malaria. Such wasters of manpower as trench foot, hepatitis, and dysentery were studied, and care was provided where needed, but for the most part these were combat zone problems. Venereal disease and malaria were dealt with on a theater-wide basis. The army aspects of both have been discussed in earlier chapters, but the control organization in both cases centered at theater headquarters. The division of function between the Medical Section, NATOUSA, and the Medical Section, SOS NATOUSA, was not always clear, but the two groups worked closely together to avoid duplication of effort and to achieve a common goal.

TABLE 22—VENEREAL DISEASE RATES, NATOUSA, JANUARY–AUGUST 1944

Month	Number of Cases	Average Days Lost per Case	Days Lost per 1,000 per Year	Rate per 1,000 per Year
January	4,458	8.1	810	100
February	4,065	10.2	927	91
March	5,027	7.0	583	83
April	4,284	5.0	421	84
May	4,211	4.7	360	77
June	4,364	4.1	269	66
July	4,757	3.0	275	90
August	4,519	2.8	243	86

Source: Annual Rpt, Med Sec, MTOUSA, 1944, an. J and apps. 32, 38.

Venereal Disease—The direction and co-ordination of the venereal disease control program rested at the theater level with the NATOUSA venereal disease control officer, Lt. Col. Leonard A. Dewey, until mid-January 1944, and thereafter Lt. Col. Asa Barnes. The program was carried out in the base sections under direction of the SOS venereal disease control officer, Lt. Col. William C. Summer, who transferred from the NATOUSA organization in May.

The practice, begun in Africa, of placing houses of prostitution off-limits to military personnel was continued in Italy, but the problem of the clandestine prostitute was more serious in the Italian cities, particularly in Naples and Rome. The enforcement of off-limits regulations and the apprehension of unlicensed prostitutes was in the hands of civilian and Allied military police, while the base surgeons, through their venereal disease control officers, were responsible for the dissemination of educational materials among base installations and troops, the establishment and maintenance of prophylactic stations, and the keeping and analysis of venereal disease records. Naples and Rome, the two largest and most accessible cities in the Italian communications zone, each had 10 "pro" stations in operation.[36]

While the venereal rates for the theater as a whole showed steady improvement through the spring and summer of 1944, measured in days lost, the gains were due rather to the introduction of penicillin therapy than to any significant reduction in the number of cases. (*Table 22*)

Malaria—The malaria control organization set up in North Africa was extended to Italy where, with some modifications, it was responsible for an effective control program in the 1944 season. The entire program was under the general supervision of Colonel Stone, preventive medicine officer on the staff of the Surgeon, NATOUSA, and was directed by Colonel Andrews of the Sanitary Corps, who was both theater malariologist and commanding officer of the 2655th Malaria Control Detachment. Under Colonel Andrews were malariologists assigned to each of the base sections, to Fifth Army, and to the Army Air Forces Service Command. A malariologist was also assigned to the Services of Supply medical section, and close liaison was maintained with the Malaria Control Branch of the Allied Control Commission, and with the British Consultant Malariologist.[37]

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[36] This section is primarily based on: (1) Annual Rpt, Surg, MTOUSA, 1944; (2) Hist, Med Sec, COMZ NATOUSA; (3) Annual Rpt, Surg, PBS, 1944; (4) Annual Rpt, Surg, Rome Area, 1944.

The actual work of malaria control was directed locally by specialized units, co-ordinated at the theater level but assigned for operational purposes to the armies and base sections. The control program was effected in three phases. (1) Surveys to determine the malariousness of an area and the density of the malaria vectors were conducted by malaria survey units. Consisting of one entomologist, one parasitologist, and eleven enlisted men, these units, known as MSU's, were in effect mobile malaria laboratories, calculating splenic indices and making blood analyses of persons living in the area to determine the incidence of the disease and seeking out mosquito breeding places. (2) The findings of the malaria survey units were turned over to malaria control units, or MCU's, each commanded by a sanitary engineer with eleven enlisted men. The MCU's carried out various forms of larviciding and physical alteration of breeding places by draining, filling, and other means. (3) Personal protective measures, such as use of protective clothing, bed nets, insect repellents, and atabrine therapy were enforced by commanding officers for all troops.

By way of advance preparation for the 1944 malaria season, an Allied Force Malaria Control School was conducted in Algiers in November 1943, with parallel American, British, and French sections. The school was attended by malariologists and other malaria control personnel, who followed up with similar schools conducted locally. Between 21 February and 25 March 1944, three separate courses were given in Naples under the direction of Maj. Maxwell R. Brand, the Peninsular Base Section malariologist. One course was for medical inspectors, one for laboratory officers and technicians, and one for the training of enlisted men to work as malaria control details. The latter course was repeated in April at Caserta, primarily for Air Forces personnel. Courses conducted for Fifth Army personnel have been discussed in earlier chapters.

The theater malaria control plan was distributed on 20 March 1944 to the commanding generals of Fifth Army; the Army Air Forces, MTO and Services of Supply, NATOUSA. As of that date, there were five malaria survey units and seven malaria control units in the theater. Two additional control units were activated in May and three survey units in July. One MSU arrived from the United States in June, bringing the totals for the season to nine units of each type. The units were distributed according to need in North Africa, Corsica, Sardinia, Sicily, and various

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[37] This section is based primarily on: (1) Annual Rpt, Med Sec, MTOUSA, 1944, an. J, app. 28; (2) Hist, Med Sec, COMZ MTOUSA; (3) Annual Rpt, Surg, PBS, 1944; (4) Annual Rpt, Med Sec, AAFSC MTO, 1944, an. B; (5) Col. Paul F. Russell, "The Theater Malaria Control Organization," Medical Bulletin, *North African Theater of Operations,* I (February 1944), 17–18; (6) Summary of Materials presented at Malariologists' Conference, 1-11 Nov 44, in Naples, Italy. For comment on the capabilities and organizational inadequacies of the malaria survey and control units, see Armfield, *Organization and Administration,* pp. 288–91.

Planes Dusting Paris Green on Mosquito-Infested Lowlands *in the Cassino area.*

points of troop concentration in western Italy. Eastern Italy was a British responsibility, except for a substantial area around Foggia for which the Air Forces Service Command was made responsible.

Control measures followed a standing operating procedure. Each individual combat and service unit was responsible for its own area, while large-scale operations such as drainage and water diversion projects were conducted by the Army engineers. Dusting and spraying from the air was carried out by a section of a ferrying squadron, using both British and U.S. personnel. One malaria survey unit operated a plant for mixing paris green, at the rate of eight to ten tons a day. DDT was used sparingly early in the season, but more and more freely as adequate quantities became available toward midsummer. Supplies and equipment were procured through Quartermaster, Engineer and Ordnance, and a labor force was drawn from the civilian population, from Italian service companies, and in combat areas from troop detachments.

The malaria control program for the theater as a whole, judged in terms of malaria case rates, was effective. Rates per 1,000 per annum for the most malarious months of 1944 were 70 in June, 81 in July, and 92 in August, compared to 29, 77, and 173 for the corresponding months of 1943. The higher 1944 rates for June and July reflect primarily the far higher proportion of theater personnel stationed in malarious areas. The August figures are more nearly comparable, contrasting as they do the experience of Seventh Army in Sicily with that of Fifth Army in Italy.[38]

The Reconditioning Program

In the Italian communications zone the reconditioning and rehabilitation program launched in North Africa was further refined and broadened. As a result of a survey conducted in late January 1944 by Colonel Munhall, commanding officer of the 6706th Conditioning Company, each of the general hospitals in the Peninsular Base Section established a convalescent and rehabilitation (C&R) section. Patients were normally transferred to this section ten days in advance of discharge from the hospital, but in most instances, reconditioning and rehabilitation had already begun with occupational therapy, light calesthenics on the wards, short walks, and various duties in the administration of the hospital, scaled to the abilities and physical capacities of the individual.[39]

In the convalescent and rehabilitation sections, each staffed by one line officer and six noncommissioned officers on temporary duty status, the program included both physical conditioning and psychological readjustment. Lectures on the progress of the war and world events and lessons from past campaigns went along with carefully graduated exercises and military drill. To get away from the hospital atmosphere, the C&R sections were generally removed as far as possible from the hospital proper. The men wore uniforms and lived much as they would in combat units. The 10-day program gave each man 40 hours of physical conditioning and 25 hours of military education.

In addition to this reconditioning program in the general hospitals, which continued throughout the war, a more comprehensive program was conducted by the 6706th Conditioning Company, which was transferred to Italy in April 1944. The conditioning company dealt with men in need of longer periods of rehabilitation, for the most part men who had previously been classified for temporary limited service up to ninety days. The normal period of duty with the conditioning company was three weeks. At the end of this time the men were examined by a board of officers from some nearby hospital, and placed in one of four categories: (1) those ready to return to duty, (2) those to be held for further conditioning, (3) those to be returned to the hospital for additional treatment, and (4) those to be sent before a hospital reclassification board for determination of future status.

The company was set up temporarily in Naples, moving in June to a site on Lake Lucrino and in July to a permanent location on Lake Averno. Both sites were close to the amphibious training area at Pozzuoli, west of Naples, and no more than five or six miles from the medical center.

Dental Service

The dental service throughout the North African Theater of Operations showed steady improvement during the first eight months of 1944, despite the fact that the number of dental officers in the theater did not keep pace with the rising troop population. At the end of December 1943 there were 703 dental officers in the theater, with a ratio to troop strength of 1:850. By the end of June the number of dental officers had risen to 765, but this larger figure represented only one dentist to each 938 military personnel. By the end of August total dental officer strength had declined to 734, or a ratio of 1:1012.[40]

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[38] Final Report of the Preventive Medicine Off, Office of the Surgeon, MTOUSA, app. 32.

[39] (1) Clift, Field Opns, pp. 399–407. (2) Annual Rpt, 12th Gen Hosp, 1944. (3) Annual Rpt, 21st Gen Hosp, 1944. (4) Annual Rpt, 300th Gen Hosp, 1944

The improvements in dental service stemmed primarily from better and more widely distributed equipment, and from the concentration of dental skills. A Central Dental Laboratory was set up in the Naples medical center before the end of 1943. Early in April 1944 a maxillofacial center was established at the 52d Station Hospital, also in Naples, to which a maxillofacial team of the 2d Auxiliary Surgical Group was attached at the beginning of June, when casualties from the Rome-Arno Campaign began flowing back to the communications zone in large numbers. The maxillofacial center reached its peak load on 7 June, with a census of 282 cases, 139 of them with bone injury.

To meet growing personnel requirements, a training course for dental technicians was instituted in May, under which two enlisted men from each station hospital were given thirty days of training at a designated general hospital, with further instruction at the Central Dental Laboratory.

The enlargement of the general hospitals in June served to further the tendency to concentration of dental skills. Where the 1000-bed generals had had 5 dental officers, the newly constituted 1500-bed hospitals had 8, and the 2000-bed units 10 dental officers. The hospital reorganization increased the Table of Organization requirements for the theater by 55 dental officers. Concentration at the army, corps, and division levels, with more extensive use of clinics and mobile laboratories, has already been noted in chapters dealing with combat activities.

As a result of these changes in distribution of dental strength and of improvements in equipment and laboratory facilities, the amount of constructive dental work performed was substantially increased over that performed in 1943.

Col. Lynn H. Tingay remained chief dental surgeon for the theater throughout the period of centralization in southern Italy, while Colonel Metz served as communications zone dental surgeon until August 1944. Both of these officers made frequent inspection trips to dental installations in the interest of improving theater dental service.

The communications zone organization for the Army Air Forces in Italy was headed by Maj. (later Lt. Col.) Estes M. Blackburn, dental surgeon of the Army Air Forces Service Command, Mediterranean Theater of Operations. Since no dental officer was assigned to the staff of the Surgeon, AAF MTO, Major Blackburn acted as adviser on supply and equipment and personnel to all Air Forces dental installations, as well as liaison with the NATOUSA and SOS NATOUSA, dental surgeons.[41]

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[40] Principal sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944, an. G; (2) Annual Rpt, Surg, PBS, 1944; (3) Hist, Med Sec, Hq, COMZ MTOUSA; (4) Dental Hist, North African and Mediterranean Theaters of Operations.

[41] AAFSC MTO, Annual Med Hist, 1944, an. E.

Veterinary Service

Shortly after his appointment in February 1944 to the vacant position of theater veterinarian, Colonel Noonan recommended that food inspection units be placed under the supervision of SOS NATOUSA and the corresponding Air Forces echelon, the Army Air Forces Service Command, MTO. The number of food inspection units in the theater at this time was wholly inadequate and authority was granted in July to activate 12 medical composite sections (food inspection), each with a veterinary officer and 4 enlisted men. These were in addition to the 3 existing veterinary food inspection detachments bearing letter designations, which continued to operate in the theater under their old T/O's. Officer personnel for the new units were drawn from replacement pools. A cadre of one enlisted man for each new unit was assigned from the 3 veterinary detachments already in the theater, the remainder of the enlisted personnel coming from other veterinary organizations and from quartermaster depots. At the same time, 3 veterinary food inspection detachments (aviation) and 2 sections were activated and assigned to the AAFSC MTO, using existing Air Forces personnel.[42]

The new organization brought food inspection units under base section control, the work being carried out in ports and in areas of heavy troop concentration where substantial quantities of food were stored or locally procured. Through improved methods of packing and storage and frequent inspections, the loss of food through spoilage was greatly reduced. No serious outbreak of food poisoning occurred anyhere in the theater.

In addition to food inspection duties, the Peninsular Base Section was responsible for activation of the 213th Veterinary General Hospital (Italian) on 4 July 1944, at Grosseto, with a complement of 15 Italian veterinary officers and 253 Italian enlisted men. The 6742d Quartermaster Remount Depot also received veterinary service through PBS.

While base section veterinarians in Italy and Sardinia aided in the local procurement of animals for military use, this work, as well as conditioning the animals so procured, was directed by the Fifth Army veterinarian, Colonel Pickering, and has been more fully treated in the combat narrative.[43]

Nursing Service

The shift of emphasis from North Africa to Italy introduced no new or unusual problems for nurses. In communications zone installations, living conditions were better in Italy, and opportunities for recreation more extensive. The total number of nurses in the theater declined from 4,398 in October 1943 to 4,000 in January 1944, owing to the transfer of several hospitals out of the theater in the late months of 1943. The number of nurses remained close to 4,000 until transfer of hospitals to southern France late in 1944 again sharply reduced the total. Approximately 75 percent of the nurses were assigned to communications zone units.[44]

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[42] Sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944, an. H; (2) Hist, Med Sec, Hq, COMZ NATOUSA; (3) AAFSC MTO, Annual Med Hist, 1944, an. D. (4) Annual Rpt, Surg, PBS, 1944. See also, Miller, *United States Army Veterinary Service in World War II.*

[43] See especially pp. 263–65, 318–20, above.

While the number of nurses in the theater was at all times adequate to the number of T/O beds, there were many periods of intensive activity when duty hours were long and patients per nurse high. During periods of heavy combat activity, nurses from fixed hospitals were often put on temporary duty with combat units, thus increasing the load for those remaining in the communications zone. The necessity for operating both fixed and mobile hospitals in Italy above T/O capacities for considerable periods of time was another factor tending to increase the burden on nurses as well as on all other hospital personnel. There is no evidence, however, that morale suffered in any way.

Lt. Col. Bernice M. Wilbur served through most of 1944 as Chief Nurse, NATOUSA; Capt. Michener served as Chief Nurse, COMZ NATOUSA, from late April 1944.

The work of the nurses in the theater was supplemented by the activities of a limited number of physical therapists and dietitians attached to the larger hospitals.[45]

Army Public Health Activities

Organization

The Civil Affairs organization set up under AMGOT before the invasion of Sicily was carried over initially to the Italian mainland. Before the Salerno landings, Sicily had been divided into two administrative regions, while other regions in southern Italy had been marked out and staffs assigned. The senior civil affairs officer for Region III, which included the Salerno and Naples areas, was Colonel Hume, a Medical Corps officer who had given up his position as Deputy Director of Public Health, Allied Military Government, for this purely administrative post.[46]

The public health and welfare officer for Region III, Lt. Col. (later Col.) Emeric I. Dubos, USPHS, went ashore at Salerno on D-day, but was unable to function during the first few days of combat. Colonel Hume and his British executive officer, Colonel Ashley, arrived at the beachhead the evening of D plus 4. Plans were prepared on the ground for the administration of the provinces of Salerno, Naples, Avellino, and Benevento, and for the city of Naples, including emergency health measures to be carried out under Army control. Allied Military Government civil affairs person-

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[44] Sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944, an. I; (2) Hist, Med Sec, Hq, COMZ MTOUSA; (3) Annual Rpt, Surg, PBS, 1944; (4) Maj Parsons and others, Hist of Army Nurse Corps, MTOUSA.

[45] Both of these groups will be discussed in detail in a forthcoming history of the Army Medical Specialist Corps to be published by the Office of The Surgeon General. See also McMinn and Levin, *Personnel in World War II*, pp. 88–91, 231–32.

[46] Principal sources for this section are: (1) Komer, Civil Affairs and Military Government in the Mediterranean Theater; (2) Thomas B. Turner, chs. XI, XII, in forth-coming volume: Stanhope Bayne-Jones, ed., "Preventive Medicine," vol. VIII, Civil Affairs-Military Government Public Health Activities, to be published by The Surgeon General; (3) John A. Lewis, Rpt to WD, MS, History of Civil Affairs in Italy, 7 Dec 45; (4) Lt Col Leonard A. Scheele, USPHS, Civil Public Health History, North African–Mediterranean Theater of Operations, May 1943–January 1944; (5) Hist of AFHQ, pt. II, sec. 3; pt. III, secs. 1, 4; (6) Monthly Rpts, Allied Control Commission, Public Health Sec, Nov 43–Aug 44. See also, Armfield, *Organization and Administration*, pp. 294–98.

General Hume

nel entered Naples with the occupying troops on 1 October and set about removing health hazards at once. According to Colonel Stone, the NATOUSA preventive medicine officer, who was one of the early arrivals, the population appeared well nourished. Water supply was sufficient for one gallon per person per day, provided none of it was used to flush the sewers.[47] As rapidly as possible the accumulated garbage of two weeks was disposed of, and the dead were buried. With the aid of U.S. and British army engineers, water and power facilities and sewers were restored. During this period, Colonel Hume acted as military governor of Naples.

With the conclusion of the first phase of the Italian campaign, the AMG organization was modified to fit the conditions encountered on the peninsula. Early in November 1943, an Allied Control Commission was established under the Military Government Section, AFHQ. Allied Military Government thereafter functioned in two echelons, one attached directly to the 15th Army Group and one at the communications zone level, attached to theater headquarters. General Alexander, the army group commander, acted as military governor of all occupied territory in Italy until the advance of the troops made it possible to set up a civil government under supervision of the Allied Control Commission. Public health work of ACC was directed by the Public Health and Welfare Subcommission headed by Brigadier G. S. Parkinson (British) with Lt. Col. (later Col.) Wilson C. Williams as his American deputy.

As part of the reorganization of the Military Government Section, a civil affairs officer was attached to each of the Allied armies, the Fifth Army assignment going to Colonel Hume, who received his promotion to brigadier general at that time. On 14 May 1944, coincident with the launching of the drive on Rome and following a pattern already established in the European theater, the Military Government Section became a general staff section, designated as G–5.

The normal practice was exemplified in the capture of Rome. General Hume took over administration of the city as soon as it was in Allied hands, acting as military governor for ten days. On 15 June, AMG, Rome Region, responsible to the Allied Control Commission, replaced the Fifth Army civil affairs organization. During the period of Army control every effort was made to clean up the city, restore utilities, rehabilitate hospitals, and provide adequate sanitation, as well as to issue food and drugs where necessary. American Red Cross personnel worked with the Army public health officers. The more permanent civil affairs group representing ACC tried to re-establish a local government with native personnel along lines familiar to the inhabitants. Administration was eventually turned over entirely to the Italian authorities.

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[47] Surg, NATOUSA, Journal, 11 Oct 43.

In the public health field, major problems were sanitation and preventive medicine. Such hazards to the health of the troops as typhus, malaria and venereal disease could be effectively controlled only by including the civilian population in control measures. While local doctors were encouraged to practice to the full extent of their abilities, general supervision was retained over hospitals. It was necessary, also, for the Allied public health organization to continue supplying drugs for civilian use.

The cities of Leghorn, Florence, and Pisa were under AMG administration by the end of August 1944.

Typhus Control in Naples

Even before the conquest of Sicily in the summer of 1943, a monitored broadcast from Rome indicated the presence of typhus in Italy. This possibility was taken into account in the medical planning for the occupation of the Italian mainland, both by the preventive medicine section of theater headquarters and by AMG public health officers. This planning was based on the use of methyl bromide (MYL) as a delousing agent, but difficulties in procurement prevented the stocking of adequate quantities of the powder and of suitable hand dusters for applying it.[48]

Rumors of typhus in Naples were confirmed after the Salerno landings by refugees from the city, but could not be verified immediately. Colonel Stone, the NATOUSA preventive medicine officer, visited Naples along with General Cowell, Director of Medical Services, AFHQ, on 1 October, coincident with the occupation of the city. Conditions were right for an epidemic. The city was overcrowded, its more than a million inhabitants had not been immunized and were heavily louse infested, and large numbers lived jammed together in air-raid shelters. The departing Germans, moreover, had released the prisoners from certain jails in which cases of typhus had occurred earlier in the year among Serbian prisoners of war. Little could be learned from the local health authorities, however. Lack of transportation and disruption of communications made it impossible for those who might have the disease to be examined by a physician. There was also confusion in terminology, since "tyfo abdominale," or typhoid fever, was often used interchangeably by Italian doctors with "tyfo," which is the word for typhus.

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[48] Principal sources for this section are: (1) Annual Rpt, Med Sec, NATOUSA, 1943; (2) Annual Rpt, Surg, MTOUSA, 1944, an. J; (3) Final Rpt, Preventive Med Off, MTOUSA, 1945; (4) Col D. G. Cheyne, Notes on Typhus in Naples 5 Dec 43; (5) ACC Public Health Sec, Monthly Rpts, Nov 43–Mar 44; (6) Capt William L. Hawley, Notes on the Typhus Epidemic and Control Measures in Naples, 1943–44; (7) Scheele, Civil Public Health History, North African–Mediterranean Theater of Operations, May 43–Jan 44; (8) Memo, Col Stone to TSG, 30 July 45, sub: Typhus Control; (9) F. L. Soper, W. A. Davis, F. S. Markham, and L. A. Riehl, "Typhus Fever in Italy, 1943–1945, and Its Control with Louse Powder," *American Journal of Hygiene*, XLV (May 1947), 305–34; (10) Stanhope Bayne-Jones, "Epidemic Typhus in the Mediterranean Area during World War II," *Rickettsial Diseases of Man* (Symposium, Medical Science Section, AAAS, 1946); (11) Pers Ltr, Gen Blesse, Surg, NATOUSA, to TSG, 6 Feb 1944; (12) Lt. Col. Charles M. Wheeler, "Control of Typhus in Italy 1943–1944 by Use of DDT," *American Journal of Public Health*, XXXVI (February 1946), 119–29; (13) Med Sitreps, PBS, Jan–Mar 44.

On his return to Algiers, Colonel Stone advised General Blesse of the potential danger, and precautionary steps were taken at once. A group representing the Rockefeller Foundation was then studying typhus control in the Middle East, and had conducted experiments with the newly developed and still top secret DDT in a French prison in Algiers. These experiments confirmed Stone's faith in the new insecticide, a quantity of which had already been requested for the theater. On Stone's advice Brigadier Parkinson (British) ordered 50 tons of 10 percent DDT, 5 tons of concentrate, and dusting guns, to be delivered to AMG by 15 December, while Stone himself ordered 60 tons of the powder and one ton of concentrate for Army use. Both requisitions were disapproved by the War Department in November.

The presence of typhus in Naples had meanwhile been established. Colonel Stone arranged with Dr. Fred L. Soper of the Rockefeller group for demonstrations of delousing methods in prisoner-of-war camps, and for the training of malaria control and other sanitary personnel in these methods. Pertinent data were distributed by the NATOUSA surgeon's office in November.[49] On the 20th of that month, Stone and Colonel Long, theater medical consultant, conferred at length with General Fox, field director of the U.S.A. Typhus Commission, which was also conducting studies in the Middle East, but independently of the Rockefeller group. General Fox was satisfied that all necessary steps had been taken, and pledged the full co-operation of the Typhus Commission.

Actually, control measures were lagging far behind needs. The public health officer for AMG's Region III, now Col. W. H. Crichton (British), had wholly inadequate resources, either of personnel or of equipment, to cope with the situation, and had not succeeded in organizing the Italian health authorities for effective assistance. By the end of November there were more than forty cases of typhus reported in Naples and probably many more than that. More vigorous control measures had become imperative.

The AMG and NATOUSA orders for DDT were reconsidered and finally approved by the War Department on 5 December. Observers from the Typhus Commission arrived in Naples on 6 December, and two days later Drs. Soper and William A. Davis of the Rockefeller group reached the city at the invitation of AMG and ACC authorities. The PBS surgeon, Colonel Arnest, placed all available supplies of MYL powder at the disposal of the Rockefeller team, while General Blesse dispatched DDT concentrate to Naples by air. The Typhus Commission observers took no part in actual control work, leaving after five days.

Contact or spot delousing began on 12 December, the homes of all reported cases being visited, and all contacts of the patients being dusted, but neither

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[49] (1) NATOUSA Surgeon, Cir Ltr No. 43, 11 Nov 43. (2) NATOUSA Cir Ltr No. 224, 15 Nov 43.

Delousing Station in Naples During the Typhus Threat

supplies nor personnel were adequate for more extensive measures. Neither was transportation available. Colonel Stone arrived on 18 December and General Fox, in response to Stone's urgent request, on the 20th. After a series of conferences with health and medical officers representing AMG, ACC, PBS, and Fifth Army, General Fox, using his personal prestige and the authority of his position to the utmost, set the machinery in motion for a full-scale attack on typhus. All clearances were obtained, and all necessary guarantees of co-operation were given by 24 December.[50]

Delousing of occupants of some 80 or 90 air-raid shelters on a weekly basis began 27 December, and the first two stations for mass delousing opened the following day. Supervised by Italian civilian inspectors, there were 33 such stations in operation by 15 January. Systematic delousing of all residents of each block in which a case occurred, and of contiguous blocks, began on 6 February. Flying squadrons began working in suburban communities on 8 January.

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[50] Surg, NATOUSA, Journal, 24, 25, 26 Dec 43.

General Fox and the Typhus Commission assumed full responsibility for typhus control in Naples on 2 January 1944, turning the task over to the Allied Control Commission on 20 February, after the crisis had passed. Dr. Soper and his associates of the Rockefeller group administered mass delousing throughout the danger period, and on a reduced scale until after the end of the war.

The turning point came around 10 January, by which date over 60,000 persons a day were being dusted with either MYL or DDT powder. The dusting stations alone averaged 1,600 a day per station, with an average staff of 13 each. All told, between mid-December 1943 and the end of May 1944, more than three million applications of dusting powder were made in Naples and surrounding towns. Out of 1,914 reported cases of typhus in the Naples area between July 1943 and May 1944, only 2 were U.S. military personnel, one a soldier whose attack was mild, the other a sailor, whose case was severe but not fatal.

CHAPTER X

Invasion of Southern France

Preparations for the Invasion

After the close of the Sicily Campaign in August 1943, Seventh Army was stripped of its combat units to provide troops for operations in Italy. Seventh Army retained some occupation duties, however, and continued to maintain a skeletonized headquarters in Palermo, pending high-level decisions as to its ultimate employment.

The merits of an amphibious operation in the Toulon-Marseille area of southern France had been discussed at Quebec in August 1943. Under the code name ANVIL, the proposal was approved by Marshal Joseph Stalin at Tehran before its formal adoption at the second Cairo conference in December 1943. By this date a tentative outline plan, envisioning a 2- or 3-division assault with a build-up to ten divisions, had been prepared.[1]

General Patton was already scheduled for a command in the forthcoming invasion of France and would leave Seventh Army in January. His successor was to be General Clark, who would, however, retain command of the Fifth Army for the time being, confining his new role to that of participation by a deputy in the planning activities. The Seventh Army planning staff, designated for purposes of security as Force 163, opened in Algiers on 12 January 1944 and eventually became a joint and combined staff.

Early Indecision

For the next two months the Seventh Army planning staff, on which Brig. Gen. Benjamin F. Caffey, Jr., represented Clark, worked in a vacuum. No troops had been actually designated, no staging areas set aside; even the size of the force to be used was not known. The only available forces were those fighting in Italy, and no one could say when it would be possible to withdraw any of them. After the initial failure of the Anzio Campaign to develop as intended and the setback before Cassino, General Alexander was convinced the Germans would stand south of Rome and insisted that every man of his command would be needed for the spring offensive in Italy. With VI Corps bogged down in the mud of Anzio beachhead and the Liri Valley still secure against every Allied thrust, Clark was relieved on 15 February of any further responsibility of ANVIL.

On 4 March 1944 Maj. Gen. Alexander M. Patch of Guadalcanal fame had become commander of the Seventh Army. The army's objective remained the same—to invade southern France in force simultaneously with, or immediately following, the Normandy landings, and exploit up the Rhône Valley, but the target date for both operations had been postponed to June. In mid-April the ANVIL D-day was again put off, this time to late July, because of the requirements of the May offensive in Italy and the needs of OVERLORD for landing craft. All first priorities went elsewhere, and the ANVIL planners were kept busy revising in terms of new unavailabilities. Rome had fallen and the Allied forces had secured the Normandy beaches before it was certain that ANVIL would even be launched.

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[1] Sources relied upon for the origin and military planning of ANVIL are: (1) Churchill, *Closing the Ring;* (2) Biennial Rpt, CofS, 1943–45; (3) Rpt of Opns, Seventh U.S. Army; (4) Truscott, *Command Missions;* (5) Robert Ross Smith, The Riviera to the Rhine, a forthcoming volume in the series UNITED STATES ARMY IN WORLD WAR II.

Planning and Mounting the Invasion

On 15 June the commander of Allied Armies in Italy, General Alexander, was directed to release the U.S. VI Corps, consisting of the 3d, 36th, and 45th Divisions; two French divisions; and various auxiliary troops to Seventh Army. Alexander and General Sir Henry Maitland Wilson, the Supreme Allied Commander in the Mediterranean, still opposed the southern France operation, urging most strongly that all troops in Italy be retained there for a knockout blow against the disorganized and retreating enemy, and then turned east through the Ljubljana Gap toward Hungary. In this proposal they were backed by Prime Minister Churchill. On the other hand, it was probably General Eisenhower's insistance that Marseille and other French Mediterranean ports were essential to supply his own forces, and that neither men nor matériel were available for two major fronts on the Continent, which tipped the scale in favor of ANVIL.[2] On 2 July General Wilson was directed to launch ANVIL on 15 August. Two days later Seventh Army headquarters moved from Algiers to Naples, where headquarters of VI Corps and of the French forces, known as Army B, were also established.

Broadly, the plan called for a 3 division daylight assault by VI Corps, under command of General Truscott, over selected beaches between Cap Cavalaire and Agay. The night before the main attack the 1st Special Service Force was to seize the offshore islands of Port Cros and Levant, a French commando group was to go ashore at Cap Nègre on the left flank to block the coastal road, and a French naval assault group was to carry out a similar mission at Pointe des Trayas on the right flank. At the same time, an airborne task force was to be dropped in the vicinity of Le Muy, about ten miles behind the landing beaches, to cut off enemy reinforcements and neutralize gun positions. Two French corps, which made up Army B under General Jean de Lattre de Tassigny, were to begin landing over the secured beaches on D plus 1, and to swing west to invest Toulon and Marseille, while VI Corps advanced up the Rhône Valley toward Lyon and Vichy. The French forces were to be made up in part of Moroccan and Algerian troops to be withdrawn, like VI Corps, from Italy. Army B also included the 9th Colonial Division, which had captured the island of Elba late in June against stubborn German resistance.

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[2] Eisenhower, *Crusade In Europe*, pp. 281–84.

General Patch Awarding Legion of Merit to Colonel Berry

A Coastal Base Section, organized 7 July, was to follow the combat troops at the earliest practicable date. Its commander, Maj. Gen. A. R. Wilson, was named on 26 June, and base section personnel were attached to the planning group near the end of July.

The training of the assault divisions began in June, as soon as possible after their assignment. The 36th and 45th Divisions trained at Salerno, where the Invasion Training Center, now attached to Seventh Army, had been established in the spring. The 3d Division trained at Pozzuoli, on the northwest rim of the Gulf of Naples; and the airborne task force established a glider and parachute school near Rome. Final dress rehearsals were completed on the night of 7–8 August, after which loading of the transports began at various ports in Italy, Sicily, North Africa and Corsica.

Dragoon, as Anvil had been rechristened on 1 August, was under way.

Medical Plans and Organization

By the end of 1943 the Seventh Army medical section had been reduced to a total of 10 officers and 18 enlisted men.

At that time the surgeon, Colonel Daniel Franklin, 3 officers, and 5 enlisted men moved to Algiers to assume the medical planning function for Force 163. At the same time the medical supply officer, the dental officer, and 6 enlisted men joined other Seventh Army supply units in Oran to work out ANVIL supply plans with SOS NATOUSA and the base sections. The remainder of the medical personnel continued at Palermo until May. The entire medical section was not reunited until Seventh Army headquarters moved to Naples early in July.[3]

The Seventh Army medical organization was similar to that of the Fifth Army, with staff sections for administration, operations, and personnel. Hospitalization, evacuation, and medical supply came under operations. There was a medical inspector, with a venereal disease control officer under him. On the professional side were a dental surgeon, veterinarian, and director of nurses, with consultants in surgery, neuropsychiatry, and chemical warfare.

On 18 June Colonel Rudolph, who had been surgeon of the declining Eastern Base Section, became Seventh Army surgeon. Key officers in the medical section as D-day for DRAGOON approached were: Colonel Robinson, executive officer; Lt. Col. (later Col.) Joseph Rich, operations; Lt. Col. (later Col.) Norman E. Peatfield, hospitalization; Lt. Col. (later Col.) Robert Goldson, evacuation; Colonel Alexander, personnel; Maj. (later Lt. Col.) Guy H. Gowen, medical inspector; Maj. (later Lt. Col.) Augustus J. Guenther, commander of the 7th Medical Depot Company, supply; and Maj. (later Lt. Col.) Charles Raulerson, administrative officer. In the professional positions were Col. Frank B. Berry, surgical consultant; Col. Alexander, who doubled as chemical warfare consultant; Lt. Col. (later Col.) Daniel S. Stevenson, veterinarian; Lt. Col. (later Col.) Webb B. Gurley, dental surgeon; Capt. (later Maj.) Alfred O. Ludwig, neuropsychiatric consultant; and Maj. Edith F. Frew, director of nurses. Colonel Berry had been chief of the surgical service, 9th Evacuation Hospital, and Major Frew had been that unit's chief nurse. Captain Ludwig had been commander of the Fifth Army Neuropsychiatric Center. Colonel Stevenson had been commanding officer of the 17th Veterinary Evacuation Hospital, while Colonel Gurley came to Seventh Army from the 21st General Hospital.

Like other aspects of the planning for ANVIL-DRAGOON, the medical plans were incomplete and subject to constant change until the assignment of units and final approval of the operation. The basic work, within the limitations imposed by insufficient data, was shared at the theater level by the NATOUSA and the communications zone staffs, and at the corps and division levels was directed by Colonel Bauchspies, the VI Corps surgeon. The point of stabilization coincided with the arrival of Colonel Rudolph, who directed the final revision of the medical plans in terms of actual mis-

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[3] Principal sources for this section are: (1) Annual Rpt, Surg, Seventh Army, 1944; (2) After Action Rpt, Surg, Seventh Army, 15 Aug–31 Oct 44, ans. 277 and 278; (3) Rpt of Naval Comdr, Western Task Force, Invasion of Southern France, Navy: A16–3 (01568) 15 Nov 44. (4) Annual Rpt, Med Sec, MTOUSA, 1944; (5) Clift, Field Opns; (6) Davidson, Medical Supply in MTOUSA; (7) Unit rpts of the individual med units mentioned in the text.

COLONELS GOLDSON, RUDOLPH, AND RICH

sion, combat forces involved, and target date.

Medical Plans for the Assault—The pattern followed in earlier amphibious operations in the Mediterranean was again the basic guide. The Navy was to be responsible for all medical care on shipboard and to the high-water mark on the landing beaches. The Army was responsible for medical care ashore. As in the Sicilian, Salerno, and Anzio landings, each combat division in the assault was to be accompanied by its own medical detachments and its organic medical battalion. In addition, each regimental combat team was to be supported in the landing phase by a collecting company and clearing platoon of a separate medical battalion. This was an improvement over the technique previously employed in the theater, whereby one of the collecting companies of each assault medical battalion had been forced to rely upon an improvised clearing platoon made up of station section personnel.[4] The airborne task force was to be supported by a collecting company with clearing elements attached. Each assault division was to have the services of two field hospital platoons, with enlisted men drawn from the fixed hospitals substituted for the nurses who were not to arrive until D plus 4. The field hospital platoons were to function in immediate proximity to the division clearing stations.

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[4] See pp. 149, 224, above.

Twenty-eight surgical and other specialist teams of the 2d Auxiliary Surgical Group were to be attached to the field hospitals and other assault units.[5] Additional teams for the troop transports were made up of personnel of the 750-bed evacuation hospitals and the general hospitals scheduled to come into France at later dates. Dispensary teams of one officer and two enlisted men each, similarly drawn from personnel of hospitals already closed for future movement, were to serve aboard the cargo vessels in the assault convoy. When the ships withdrew from the beach area, these teams were to report to the nearest evacuation hospital for reassignment until their own units arrived. The forward distribution section of a blood transfusion unit was to be attached to one of the field hospitals, but was to serve the entire corps.

During the landing phase the three separate medical battalions were to be attached to the beach groups in the three areas into which the invasion coast was divided. Their commanding officers were designated as beach group surgeons, each being responsible for the setting up and operation of medical installations in his area and for co-ordination with the medical sections of the Navy beach battalions. The beach control group surgeon was to take over all Army responsibility for medical care and evacuation on the beachhead when the area was secure.

The 3-plus French divisions scheduled to go ashore on D plus 1 were to be similarly accompanied by their own medical units, though the support available was less extensive than that assigned to the assault troops of VI Corps. The initial French medical complement included a medical battalion, a field hospital, and a blood transfusion unit.

Hospitalization—In addition to the beds available in the clearing stations and field hospital platoons, each of the three assault divisions was to be accompanied by a 400-bed evacuation hospital, to be established between D plus 1 and D plus 4, or as soon as the situation permitted. Two comparable evacuation hospitals, U.S. equipped but French staffed, were to accompany the landing elements of Army B.

By D plus 10, when the French forces were to have reached 7 divisions, the medical support for Army B was to be augmented by 2 field hospitals, 2 400-bed evacuation hospitals, and 2 750-bed evacuations. The 3 divisions of VI Corps were to be backed up by 3 750-bed evacuation hospitals, with a convalescent hospital scheduled for somewhat later arrival.

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[5] Annual and Special Rpts, 2d Aux Surg Gp, 1944. The D-day troop list in Report of Operations, Seventh Army, III, 908, and Annual Report, Medical Section, MTOUSA, 1944, are probably incorrect in placing the number at 30 teams. Annual Report, Surgeon, Seventh Army, 15 August–31 October 1944, Annex 277, both identify only the 26 teams that were attached to the field hospitals in the landings, leaving 2 surgical teams—or possibly 4—unaccounted for. One of these, together with 3 medical officers of the 43d General Hospital, accompanied the 1st Special Service Force in its H minus 8 attack on the islands of Levant and Port Cros. Another may have accompanied the airborne task force, although no conclusive evidence to that effect has been found. It is the recollection of Dr. Berry, then surgical consultant to Seventh Army, that 2 teams accompanied the 95th Evacuation Hospital, but these were probably among the 10 already counted as being assigned to the ALPHA Attack Force. (See recorded interv, Dr. Berry, 4 Nov 58. commenting on preliminary draft of this volume.)

To supplement these mobile units, plans also called for the establishment of 14,250 fixed beds in southern France as rapidly as the military situation permitted. Three 2,000-bed general hospitals, three 1,500-bed generals, seven 500-bed station hospitals, and a 250-bed station hospital were assigned to the Coastal Base Section, organized in Naples 6 July by SOS NATOUSA, with Colonel Bishop as surgeon. Bishop had been executive officer to the groups working on typhus control in Naples, and more recently surgeon of the Mediterranean Base Section. The assigned hospitals were to be withdrawn from Africa, Italy, and Corsica.

Evacuation—Evacuation from the beaches in the early hours of the assault was to be by landing craft and water ambulance to the transports. During the entire assault phase of the operation, seaward evacuation was a Navy responsibility, the Army being responsible only for the transportation of casualties to the Navy evacuation stations.

Two hospital ships were to arrive in the landing area on D plus 1, after which one ship was to arrive at dawn each day until D plus 10. Hospital ships were then to be sent forward on call of the Seventh Army surgeon. Twelve such vessels were to be made available for this purpose, operating from Corsica. All casualties were to be evacuated to Naples until D plus 7. Thereafter U.S. and British casualties were to be evacuated to Naples and French casualties to Oran. Air evacuation was scheduled to begin on D plus 7. For evacuation from the combat zone to rear areas in France, motor ambulances were to be used until rail lines were repaired for the operation of hospital trains.

Medical Supply—The ANVIL-DRAGOON plans provided for two levels of medical supplies and equipment. The assault forces were to carry with them supplies adequate for the landings and the early expansion from the beachhead. A further build-up was to be available to meet the needs of Seventh Army and the attached French Army B until a normal supply system could be established by the base section personnel scheduled to follow the combat troops after the ports of Toulon and Marseille had been secured. It was not possible to determine either level until the size of the operation was known, yet if the supplies were to be delivered on time, it was essential that orders be placed months in advance. It was therefore necessary to requisition initially through SOS NATOUSA solely on the basis of the 3-division assault and 7-division follow-up called for in the outline plan.

Calculations were based on supply from within the theater for 60 days, after which there would be direct deliveries to southern France from the States. Each subtask force in the landings was to carry medical supplies for 7 days maintenance, which were to be collected at dumps and issued by the beach groups. The assault troops were to carry individual supplies of such items as atabrine and motion-sickness pills, while the medical personnel going ashore were to carry litters, blankets, and splints, as well as necessary drugs in sealed, waterproof containers. The bulk of the supplies for the landing forces, however, was to be in the form of the newly devised beach maintenance units, each containing a balanced stock of medical items sufficient to maintain 5,000 troops for 30 days. These were to be supplemented by such additional critical items as blood plasma, morphine syrettes, plaster of paris, sulfaguanadine, paregoric, oxygen, and dressings. Medical supplies were to be packed in clearly marked boxes, not exceeding 70 pounds in weight. Supplies for the French forces were to be identically packed, but marked with the tricolor.

Advance detachments of the Army medical depot company were to accompany the assault, functioning as elements of the beach groups for collection and distribution of medical supplies. All medical units in the assault, in addition to making up any equipment shortages, were authorized to draw supplies 20 percent in excess of their normal allowances.

Supplies for subsequent phases of the campaign were to be delivered as operational medical maintenance units, a revised and modified version of the old medical maintenance unit. Like the MMU relied upon in earlier campaigns, it was designed to provide balanced medical supplies to meet the needs of 10,000 men for 30 days.

Assignment and Training—The first assignment of medical personnel to the southern France operation, other than in a purely planning capacity, was the attachment of three officers and three enlisted men from the Seventh Army medical section to the beach control group formed at Mostaganem, Algeria, early in May. The group included representatives of the various supply services concerned with the coming campaign. The medical complement was to direct the unloading of hospitals over the beaches, evacuate casualties, and control the flow of medical supplies from ship to dump until Seventh Army and the Coastal Base Section were able to take over their own respective supply functions. The 7th Medical Depot Company was later assigned to Seventh Army, and the 1st Advance Section was attached to the beach control group.

Assignment of medical personnel to the task forces necessarily had to be delayed until the combat elements themselves were assigned and the invasion plan completed. As finally approved, plans called for four major task forces, one to be airborne and three to strike the beaches between Cap Cavalaire and Agay from the sea. The three attack forces known as ALPHA, DELTA, and CAMEL, were built respectively around the 3d, 45th, and 36th Infantry Divisions. The medical units assigned to each attack force trained with the combat troops, the ALPHA Force at Pozzuoli the DELTA and CAMEL Forces at Salerno, and the 1st Airborne Task Force near Rome.

The medical support assigned to the task forces was as follows:

ALPHA Attack Force: 3d Division medical detachments; 3d Medical Battalion (organic); 52d Medical Battalion, including the 376th, 377th, and 378th Medical Collecting Companies, and the 682d Medical Clearing Company; Headquarters and 1st Platoon of the 616th Medical Clearing Company, 181st Medical Battalion; the 1st and 3d Hospitalization Units, 10th Field Hospital, with ten teams of the 2d Auxiliary Surgical Group, and the forward distribution section of the 6703d Blood Transfusion Unit attached; 95th Evacuation Hospital.

DELTA Attack Force: 45th Division medical detachments; 120th Medical Battalion (organic); 58th Medical Battalion, including the 388th, 389th, and 390th Medical Collecting Companies and the 514th Medical Clearing Company; the 2d Platoon, 616th Medical Clearing Company; the 2d Hospitalization Unit, 10th Field Hospital, and the 2d Hospitalization Unit, 11th Field Hospital, with nine teams of the 2d Auxiliary Surgical Group attached; the 93d Evacuation Hospital.

CAMEL Attack Force: 36th Division medical detachments; 111th Medical Battalion (organic); 56th Medical Battalion, including the 885th, 886th, and 887th Medical Collecting Companies, and the 891st Medical Clearing Company; the 1st Platoon of the 638th Medical Clearing Company, 164th Medical Battalion; the 1st and 3d Hospitalization Units, 11th Field Hospital, with seven teams of the 2d Auxiliary Surgical Group attached; the 11th Evacuation Hospital.

The 1st Airborne Task Force was to receive support from the medical detachments of its own component units, which included a British parachute brigade; the 517th Parachute RCT and 509th Parachute Infantry Battalion from the Italian front; the 1st Battalion, 551st Parachute Infantry; the 550th Infantry Airborne Battalion; and miscellaneous artillery, infantry, engineer, signal, antitank, chemical, ordnance, and supply units. To serve the whole task force, the 676th Medical Collecting Company of the 164th Medical Battalion, with clearing elements attached, went through special glider training. Six officers, a technician, and a team of the 2d Auxiliary Surgical Group constituted the medical support for the 1st Special Service Force.

Training of medical troops followed techniques similar to those used in earlier amphibious operations, including waterproofing of vehicles and equipment, shore-to-ship evacuation, and ambulance and litter carries under simulated combat conditions.

Medical Support of Seventh Army in the Field

The invasion of southern France, fifth and last amphibious operation in the Mediterranean, was by all odds the most successful of the five. The landing beaches were secured and all initial objectives taken within thirty-six hours. In less than a month a German army had been virtually destroyed, all southern and eastern France had been liberated, and Seventh Army had linked its front with that of the Normandy invasion force and was more than 400 miles north of its landings. In this spectacular dash, the achievements of the medical troops were no less decisive than the triumphs of the combat arms.

The Military Campaign

In the early evening of 14 August 1944 a mighty convoy of 855 ships, out of a dozen Mediterranean ports, rendezvoused off the west coast of Corsica and sailed northwest toward the famed French Riviera. For the past 10 days the

Mediterranean Allied Air Force had pounded targets from Genoa to Sète, slowly closing in to isolate the landing beaches. A feigned attack including a dummy parachute drop on beaches 60 miles west of the real objective was then being mounted, but there was no fake about other preparatory missions. In the early hours of 15 August, troops of the 1st Special Service Force scaled the cliffs on the seaward side of Port Cros and Levant; French commandos landed at Cap Nègre west of the assault area; and other French troops went ashore at Pointe de Trayas to the east. Allied paratroops began dropping through fog around Le Muy 10 miles behind the designated beaches, and were followed by glider troops as soon as light permitted. Swarms of landing craft, covered by carrier-based planes and naval guns, headed for the indented shore between St. Tropez and St. Raphael, the first troops landing about 0800.[6]

The Germans, though misled for about an hour by the covering operations to the west, had expected the Allied forces to land where they did and had alerted their units. However, their forces were dispersed and opposition was relatively light on all beaches. The French on the right flank had failed in their mission, but the commandos on the left and the 1st Airborne Task Force, 10,000 strong, in the rear of the landing area, had cut off the possibility of enemy reinforcement. The assault troops, aided by the Maquis—or French Forces of the Interior as the underground was officially known—pushed rapidly inland. In the late afternoon of 15 August patrols of the 45th Division made first contact with the airborne force, and by the close of D plus 1 the "blue line"—drawn far enough inland to protect the beaches from enemy artillery and to give control of main routes north and west—had been reached.

The next few days were decisive. The 36th Division on the right pushed east far enough to protect the beachhead, then turned north after being relieved on 20 August by infantry elements of the airborne task force. The 45th Division in the center advanced northwest toward the Durance River, and the 3d Division on the left struck west to capture the key road center of Aix-en-Provence just north of Marseille on 21 August. On the 19th the German commander of *Army Group G* began to withdraw all troops, except the two divisions garrisoning Toulon and Marseille, up the Rhône Valley.

A fast-moving armored task force led by the VI Corps deputy commander, Brig. Gen. Frederick B. Butler, was already ahead of the German forces. Task Force Butler had left its assembly area on 18 August, racing north toward Grenoble, where mountain passes had been blocked against any attempt on the part of the enemy to reinforce from that direction. The task force had then turned west to close the escape route in the Montélimar area, where the Rhône Valley narrows and the corridor is dominated by high ground to the northeast. Butler's forces were not adequate, however, and the Germans won the opening round on 23 August, when elements of the 141st Regiment of the 36th Division reached the area but were unable to seize the city of Montélimar. The Germans rushed forward their best unit, the *11th Panzer Division*, to force open the Montélimar Gate for their retreating columns, while the remainder of the 36th Division from the east, the 45th from the southeast, and the 3d from the south hurried to the aid of hard-pressed Task Force Butler. The battle raged for eight days, with the larger part of the German forces escaping before the trap was completely closed. The enemy nevertheless suffered heavy losses and left thousands of vehicles and guns, including five heavy railroad guns, as wreckage lining the route north.

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[6] Principal sources for this section are: (1) *The Seventh United States Army: Report of Operations, France and Germany, 1944–1945* (Heidelberg, Germany: Aloys Gräf, 1946), vol. I; (2) Rpt of Naval Comdr, Western Task Force, Invasion of Southern France; (3) Rpt of Opns, VI Corps, Aug, Sep, 44; (4) Truscott, *Command Missions;* (5) Général [Jean] de Lattre de Tassigny, *Histoire de la Première Armée Française* (Paris: Plon, 1949); (6) Samuel Eliot Morison, "History of United States Naval Operations in World War II," *The Invasion of France and Germany 1944–1945* (Boston: Little, Brown and Company, 1957); (7) Craven and Cate, eds., *Europe: ARGUMENT to V–E Day*, pp. 408–38; (8) Taggert, ed., *History of the Third Infantry Division in World War II;* (9) Huff, ed., *The Fighting 36th;* (10) *The Fighting Forty-Fifth;* (11) WD Special Staff, Hist Div, Invasion of Southern France, OCMH files; (12) Smith, Riviera to the Rhine.

Meanwhile, one corps of General de Lattre's French Army B, consisting of the 3d Algerian, the 9th Colonial, and the 1st Armored Divisions, a provisional infantry division, and two groups of Moroccan tabors (each group equivalent to a regiment) and special troops, had relieved VI Corps in the coastal area and enveloped Toulon and Marseille from the land side, in conjunction with naval assaults from the sea. Both cities fell on 28 August, and the French forces, augmented by newly arrived divisions, turned northward up the Rhône to join VI Corps.

On the eastern flank the airborne task force, with the 1st Special Service Force attached, had taken the famous resort towns of Cannes and Nice and had cleared the mountainous area north and east of those cities.

By 31 August, D plus 16, Seventh Army had taken 57,000 prisoners, with a loss to itself of 2,733 killed, captured, and missing in action. U.S. patrols were at the Italian border, French patrols were at the Spanish border, and the Germans were fighting only with stubborn rear-guard actions as they sought desperately to slip through the narrowing gap between Seventh Army, now in the vicinity of Lyon, and General Patton's Third Army, which was pushing east from Paris.

The advance was now a pursuit. Lyon was occupied on 3 September. The 3d Division took Besançon after hard fighting on 8 September, and two days later the French 1st Armored Division reached Dijon. On 11 September patrols of Seventh and Third Armies met at Saulieu a few miles west of Dijon, and the Allied front was continuous from the Swiss frontier to the English Channel.

On 15 September Army B became the 1st French Army, forming with Seventh Army the 6th Army Group under General Devers. At this time the DRAGOON forces came under operational control of Supreme Headquarters, Allied Expeditionary Force, and the troops were regrouped in accordance with SHAEF plans. 1st French Army shifted to the right flank, hinging on the Swiss border, while VI Corps turned north to cross the Moselle in the vicinity of Épinal, and advanced toward Strasbourg beyond the Vosges Mountains.

The exploits of Seventh Army thereafter belong to the history of the European Theater of Operations.

Field Medical Service

The Assault Phase—Although the prearranged landing schedules were not always followed to the letter, medical service during the beach phase of the invasion worked smoothly. Delays were caused primarily by a more rapid advance than had been anticipated, with consequent unexpected demands for trucks and landing craft by the combat troops; and in some instances by dispersal of unit equipment among several vessels. While medical personnel supporting each task force had their own problems, certain principles were common to the whole operation.

Litter teams from the collecting companies of the organic medical battalions were attached for the landings to the assault units, not less than three nor more than four 5-man teams to each infantry battalion, and these, with the personnel of the battalion aid stations, were the first medical troops ashore. Ideally, they were to be followed by the beach medical battalions, each organized for the landings into 3 collecting-clearing companies, with the collecting element of each company further divided into 3 sections of one officer and 22 enlisted men each. The remaining elements of the collecting companies of the organic medical battalions were to come next, accompanied or immediately followed by the field hospital units, which were stripped down to 50-bed capacity. The personnel of the evacuation hospitals were then to land and go into bivouac to await their equipment. The clearing companies of the organic medical battalions were to be held back until it was possible to establish them at least 5 miles inland, where the field hospital units, already ashore, would join them. Medical supply personnel were to land on D plus 1.[7]

The 3d Division assault on the left flank went pretty much according to plan. Landings were made in two separate areas: on the Bay of Cavalaire, east of the town of that name, by the 7th and 30th Regimental Combat Teams; and on the Bay of Pampelonne, about six miles northeast of the Cavalaire landings and three miles southeast of St. Tropez, by the 15th RCT. The battalion medical sections, reinforced by collecting company litter squads, landed behind their infantry battalions within the first two hours. On the Cavalaire beaches, Collecting Company C of the organic medical battalion, supporting the 30th Infantry, came ashore ahead of schedule at H plus 4 and had its station established by 1400. Company A, supporting the 7th Infantry, did not land until H plus 12, its station going into operation at 2200. Neither company had any ambulances until D plus 1.

At H plus 6 a collecting company and the 1st Platoon of the Clearing Company, 52d Medical Battalion, went ashore at Pampelonne beach and had the beach clearing station in operation by 1600. The landing of the Cavalaire beach group medical complement—the

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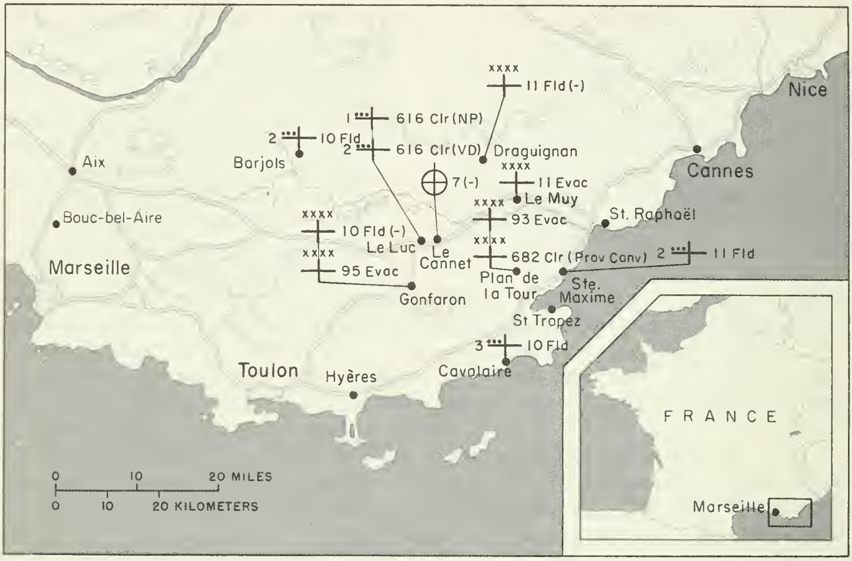
[7] Principal sources for this section are: (1) After Action Rpt, Surg, Seventh Army, 15 Aug–31 Oct 44, an. 278; (2) Rpt of Naval Comdr, Western Task Force, Invasion of Southern France; (3) ETMD, MTO, for Oct 44; (4) Ltr, Col Reeder to Surg, NATOUSA, 18 Aug 44, sub: Med Observer's Rpt, Seventh Army Opn; (5) Annual and/or Monthly Rpts of the following med units: Surg, 3d Inf Div; Surg, 36th Inf Div; Surg, 45th Inf Div; 3d Med Bn; 52d Med Bn, 56th Med Bn; 58th Med Bn; 111th Med Bn; 120th Med Bn; 164th Med Bn; 181st Med Bn; Surg, VI Corps; Surg, Seventh Army; 10th Field Hosp; 11th Field Hosp; 11th Evac Hosp; 93d Evac Hosp; 95th Evac Hosp; 2d Aux Surg Gp; 7th Med Depot Co.


XXXX
11 Fld (-)
Nice
1 616 Clr (NP)
2 10 Fld
2 616 Clr (VD)
Draguignan
Aix
Borjols
XXXX
7 (-)
11 Evac
Le Muy
Cannes
XXXX
93 Evac
St. Raphaël
Bouc-bel-Aire
XXXX
10 Fld (-)
Le Luc
Le Cannet
XXXX
682 Clr (Prov Conv)
2 11 Fld
Marseille
XXXX
95 Evac
Plan de la Tour
Ste. Maxime
Gonfaron
St Tropez
3 10 Fld
Toulon
Hyères
Cavalaire
FRANCE
Marseille
0 10 20 MILES
0 10 20 KILOMETERS

Map 30—Seventh Army Hospitals and Medical Supply Dumps, 20 August 1944

remaining two collecting companies and the 2d platoon of the clearing company, 52d Medical Battalion, and the 1st Platoon of the 616th Clearing Company, the 181st Medical Battalion—was two hours later, the beach clearing station being set up at 1800.

By midafternoon the Alpha beaches were clear and the combat spearheads already several miles inland, making it possible to land the remaining medical units. At H plus 8—1600, or four in the afternoon—the 1st and 3d Platoons of the 10th Field Hospital came ashore, one unit at each beach. The Pampelonne unit was receiving patients by 2000, but the Cavalaire unit did not recover its equipment until D plus 1. At the same time the 3d Medical Battalion clearing company and personnel of the 95th Evacuation Hospital landed at Cavalaire. The 95th went into bivouac to await its equipment, while the 3d Division clearing company moved inland and set up station two miles north of La Croix, opening at 1915. The site of the clearing station was about equidistant from the beaches and some five miles inland. The collecting company in support of the 15th Infantry did not debark at Pampelonne beach until 0400 on D plus 1, and remained without ambulances until noon. (*Map 30*)

The division clearing station moved on D plus 2 to Cogolin, where it was joined by one unit of the 10th Field Hospital and the 95th Evacuation, which was still not in operation. All three installations moved to Gonfaron, some twenty miles inland, on D plus 3. The

95th opened the following morning, 19 August, at 0800. The other 3d Division platoon of the 10th Field Hospital went into bivouac in the same locality on 20 August.

The 45th Division, constituting with its reinforcements the DELTA Force, landed on a strip of beach no more than three miles wide in the dead center of the VI Corps landing area just northeast of the town of Ste. Maxime. Here expediency and availability of landing craft rather than the prearranged schedule determined the order of landing for medical units.

As on the ALPHA beaches, the medical detachments and the litter teams of the organic collecting companies went ashore with the infantry battalions making the assault, closely followed by units of the beach medical battalion and the remainder of the 120th Medical Battalion organic to the division. One collecting-clearing unit of the 58th Medical Battalion was ashore at H plus 2½ and had its station in operation one-half mile nothwest of Ste. Maxime by 1230. A second collecting-clearing unit landed on the easternmost of the 45th Division beaches at H plus 4, opening station three miles northeast of Ste. Maxime. The third collecting-clearing unit of the beach battalion was delayed until 1930, finally landing on the ALPHA beaches south of St. Tropez and opening station a half mile inland.

All personnel of the 120th Medical Battalion were ashore by H plus 6. Collecting stations for the two assault regiments were in operation by 1100. Jeeps borrowed from the infantry were used until the ambulances arrived. The clearing company went into bivouac, the 1st platoon setting up station about six miles inland near Plan de la Tour late on 16 August.

Units of the 10th and 11th Field Hospitals attached to the DELTA Force both landed about noon of D-day, but neither went into operation. The 2d Platoon of the 10th Field received patients at Plan de la Tour on 17 August but the 2d Platoon of the 11th Field did not operate at all during the beach phase. The 93d Evacuation Hospital, which landed near Ste. Maxime at H plus 4, opened at Plan de la Tour on 17 August.

Here, as on the ALPHA beaches, expansion inland was rapid. The 2d Platoon of the division clearing company opened 5 miles south of Vidauban and about 15 miles from the beach shortly before noon on 18 August, while the 1st Platoon moved more than 20 miles northwest from Plan de la Tour to Silans-la-Cascade. Beach clearing stations of the 58th Medical Battalion moved into Ste. Maxime and St. Tropez on D-day and D plus 1, respectively.

The westernmost of the beaches assigned to the 36th Division, or CAMEL Force—a beach on the Gulf of Fréjus within a mile of the town of that name and equally close to St. Raphaël—was not actually used because underwater obstacles had not been cleared. Instead, all landings were made on three beaches east of St. Raphaël and about a mile apart. Litter sections of the organic collecting companies landed with the battalion aid stations of the assault troops. All personnel of the 111th Medical Battalion were ashore by H plus 8, although the equipment of the clearing company was not unloaded until the evening of D plus 1. By that time the fighting was so far inland that the division clearing station was first established near Le Muy, fif-

Medics Giving First Aid *on invasion beach, 15 August.*

teen miles from the beach, in the early afternoon of 17 August. The station moved ten miles farther inland the following day, to a site near Draguignan.

The collecting-clearing units of the 56th Medical Battalion, meanwhile, had experienced similar delays in landing their equipment. The first beach clearing station in the Camel area was set up four miles east of St. Raphaël at H plus 14, or 2200. Before this time all caualties were evacuated to offshore craft by the Navy beach group. The other two beach clearing stations were set up in St. Raphaël on D plus 2 and D plus 3, respectively.

The two platoons of the 11th Field Hospital attached to the Camel Force and the 11th Evacuation Hospital landed together at 1900, or H plus 11, going into bivouac near the landing area. The evacuation hospital and one unit of the field hospital followed the division clearing station to Le Muy on 17 August, going into operation the following morning. The other field hospital platoon joined the clearing station at Draguignan on 18 August. On the Camel beaches, one surgical team served with each clearing platoon of the beach medical battalion.

The 1st Airborne Task Force was supported initially by parachute medical troops making up the parachute infantry detachments. Personnel of the 676th Medical Company began landing in the vicinity of Le Muy by glider about 0800 on D-day, the last wave touching down at 1851. Medical supplies and equipment, preloaded in 12 jeeps with ¼-ton trailers, were landed safely. A collecting station was established in a barn at Le Metan soon after the first wave landed, personnel and equipment being added as they arrived. The station moved to larger quarters on 16 August. In all, 227 casualties were treated before evacuation to the Camel beaches by Army transportation was possible on 17 August.

On the supply side, the advance section of the 7th Medical Depot Company landed in the vicinity of Ste. Maxime on 16 August, and a detachment consisting of one officer and twenty enlisted men took over operation of the Delta beach supply dump from the 58th Medical Battalion on that date. The following day one officer and eighteen enlisted men of the depot company were attached to the 52d Medical Battalion for temporary duty to operate the 3d Division medical supply dump, and on 18 August a similar detachment relieved the 56th Medical Battalion of supply functions in the 36th Division area.

The VI Corps surgeon, Colonel

TABLE 23—ADMISSIONS AND DISPOSITIONS, SEVENTH ARMY MEDICAL INSTALLATIONS, 15–18 AUGUST 1944

	Admitted to Hospital	Died in Hospital	Evacuated to COMZ	Returned to Duty
Total	2,996	17	2,229	199
U.S. Army:				
Disease	876	....	519	114
Injury	260	1	95	23
Battle casualty	1,121	11	1,053	37
Total, U.S. Army	2,257	12	1,667	174
U.S. Navy	27	1	22	2
British	32	....	[a] 69	3
French	116	....	96	2
Other Allies	39	1	3	2
Enemy	505	3	364	[b] 14
Other	20	....	8	2

[a] Presumably includes British naval personnel, not cared for in any U.S. installation, but evacuated by U.S.
[b] To POW inclosures.

Source: After Action Rpt, Surg, Seventh Army, 15 Aug–31 Oct 44 an. 278

Bauchspies, set up headquarters near Ste. Maxime at 1800 on D-day, but for the next 2 or 3 days could do little except keep in touch with medical units functioning under divisional control. The breakout from the beachhead was so rapid, however, that it was possible to resume a normal organizational pattern within 3 or 4 days. The 58th Medical Battalion reverted to Seventh Army on 17 August and was attached to the beach control group. The field hospitals passed from division to corps control on 18 August, while the evacuation hospitals reverted to army control on the same date. On 19 August the 56th Medical Battalion was attached to VI Corps.[8]

Nurses of the field and evacuation hospitals and of the surgical group landed and joined their units on 19 August.

Delays in landing equipment of clearing companies and hospitals might have been serious had casualties been heavier than they were. Air and naval cover attacks in widely separated areas, however, kept the enemy from concentrating his forces, and opposition on all beaches was lighter than had been anticipated. Hospital admissions, including admissions to clearing stations, for the beach phase of the operation were approximately 3,000. (*Table 23*) Mean troop strength for the week ending 18 August was 113,854.

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[8] Sources disagree as to exact dates. The text follows the contemporary account of the theater medical observer, Colonel Reeder. See Ltr, Reeder to Surg, NATOUSA, 18 Aug 44, sub: Medical Observer's Rpt, Seventh Army Opn. Slightly later dates given by some of the medical units concerned probably indicate only that there was some lag in completing the change-over.

The Montélimar Gate—With the beaches secure and the ports of Toulon and Marseille under seige by Army B, VI Corps was free to exploit up the Rhône Valley. The road net was excellent and with the formidable aid of the French resistance forces there was fair prospect of trapping a large part of the German *Nineteenth Army* if the corridor along the east bank of the Rhône could be closed off somewhere below the Drôme River—the so-called Montélimar Gate—before the enemy forces could be withdrawn.[9]

The rapid pace put a heavy strain on medical installations. The evacuation hospitals could not keep pace, and main reliance had necessarily to be placed on the organic medical battalions and on the field hospital units, supplemented when necessary by clearing platoons of the corps medical battalions. Collecting companies of the same battalion were sometimes as much as 150 miles apart. Clearing companies often operated two stations, while ambulances and borrowed trucks were in continuous movement over excessively long evacuation lines. Good roads made aid stations easily accessible to ambulances, permitting the diversion of many litter bearers for assignment as relief drivers.

A reinforced collecting company of the 111th Medical Battalion accompanied Task Force Butler in its dash toward Grenoble and its subsequent swing west down the valley of the Drôme. The collecting station of this unit was already in Sisteron, sixty-five miles north of the battalion headquarters at Draguignan before the end of the day, 18 August. Two days later it was at Lac on the Drôme, fifty miles northwest of Sisteron; and on 21 August it was at Marsanne, overlooking the Rhône from the heights northeast of Montélimar.

The 36th Division followed on the heels of Task Force Butler, swinging farther north to protect the flank. The 143d RCT entered Grenoble on 22 August, where a collecting station was set up by the 885th Medical Collecting Company, borrowed from the 56th Medical Battalion to replace the company attached to the task force. The next day the collecting station of the 143d was sixty miles southwest of Grenoble at Romans, close to the junction of the Isère and the Rhône above Valence, thence moving south with its combat team to the area occupied by the Butler Task Force.

The 141st and 142d combat teams of the 36th Division were also on the high ground above Montélimar by 23–24 August, their supporting medical units keeping pace by leapfrog tactics and almost continuous movement. The 36th Division clearing company leapfrogged its platoons from Draguignan to Sisteron to Aspres to Crest in 4 days, single moves covering up to 120 miles. Until the last 2 or 3 days of August, when the combat forces began pursuit of enemy remnants toward Lyon, 36th Division medical units remained clustered a few miles north and east of Montélimar evacuating to the clearing station at Crest, a maximum distance of 10 miles.

The 1st Platoon of the 11th Field Hospital, which opened at Crest on 22 August, acted as an evacuation hospital for three days, since there was no evacuation nearer than the beach area, more than

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[9] Principal sources for this section are: (1) After Action Rpt, Surg, Seventh Army, 15 Aug–31 Oct 44, an. 278; (2) Annual Rpt, Surg, Seventh Army, 1944; (3) Annual Rpt, Surg, VI Corps, 1944; (4) Unit rpts of med units mentioned in the text.

Ambulance Passing Through Demolished Village Near Montélimar

200 miles distant by highway. On 25 August the 3d Platoon joined the 1st at Crest, and the 11th Evacuation opened in the vicinity of Aspres, 65 miles to the rear. Thereafter evacuation was to Aspres, which became the medical center of VI Corps with the arrival of the corps surgeon on 26 August. During the Crest period, from 22 through 31 August, the clearing station of the 111th Medical Battalion admitted 2,174 patients, of whom 840 were battle casualties and 411 were prisoners of war. The heaviest day was 27 August, when 202 of the 322 admissions were battle casualties. The largest number of prisoner patients was received on 29 and 30 August, the totals being 120 and 191, respectively.

In the Montélimar area, both the collecting stations and the clearing station at Crest were intermittently under enemy fire.

Movement of 45th Division medical units, following a pattern similar to those of the 36th, was characterized by long and frequent jumps. The 179th Regimental Combat Team, which had been in reserve during the landings, spearheaded the drive north behind the 36th Division, occupying Grenoble on 23 August. A collecting company of the 120th Medical Battalion took over the station established the day before in support of the 143d RCT, remaining at the site for six days. The 180th RCT turned east from the Sisteron-Aspres-Gap triangle to occupy Briançon, only 5 miles from the Italian frontier. The collecting company in support moved 140 miles from the beach area to Embrun on 23 August, evacuating casualties more than 50 miles over mountain roads to the division clearing station near Serres on the Sisteron-Aspres road. The 3d Platoon of the 10th Field Hospital joined the clearing station there on 23 August, the 2d Platoon arriving the following day. The clearing station of the 56th Medical Battalion also set up in the Serres area, where it served as a holding hospital for minor medical cases. During the last week of August the 10th Field Hospital units at Serres admitted 201 medical cases and 64 battle casualties.

A platoon of the 120th Medical Battalion clearing company moved forward to Pont-de-Claix just south of Grenoble on 27 August.

The 157th RCT of the 45th Division met strong opposition at Apt, a few miles north of its Durance River crossing, on 22 August, but reached the Serres area by the 24th. The regiment proceeded north, crossing the Drôme east of Crest and protecting the north bank of the river. Evacuation from the collecting station of the 157th for the next two days was to the 36th Division clearing station at Crest.

The 3d Division, meanwhile, had advanced northwest from Aix-en-Provence to Avignon at the junction of the Durance and Rhône Rivers, taking the city on 25 August. The division then turned north, pursuing the retreating enemy up Highway 7. Montélimar was finally captured by the 3d Division on 28 August, the same day on which both Toulon and Marseille fell to the French forces of General de Lattre. Although badly battered, the bulk of the German troops had already slipped through the Montélimar Gate. Clearing stations of the 3d Division, with their accompanying field hospital units, were successively at Brignoles, Aix, the vicinity of Carpentras northeast of Avignon, and Nyons southeast of Montélimar.

The last three days of August saw VI Corps moving north from the Drôme on a wide front in another attempt to encircle the enemy before he could reach the Belfort Gap and the Rhine. The 45th Division swung northwest from Grenoble, and the 36th advanced north toward Lyon, while the 3d delayed only long enough to mop up in the Montélimar battle area. French Army B began a simultaneous march up the west bank of the Rhône to make contact with VI Corps in the vicinity of Lyon. Task Force Butler was dissolved, its components reverting to their own organizations.

Expansion to the Moselle—The rapid pursuit of the enemy north from the Montélimar battle area put field medical units to a severe test. Lyon fell to the French 2d Corps on 3 September, but most of VI Corps was already well beyond that point. Four days later the 3d Division, with the 45th on its right and the 36th on its left, stormed the ancient fortress city of Besançon more than 200 miles from the Drôme River line of 28 August.[10]

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[10] Sources for this section are the same as those mentioned in n. 9 above.

JEEP AMBULANCE BRINGING WOUNDED BACK ACROSS THE MOSELLE

During this period, clearing stations made almost daily moves, platoons leapfrogging one another, while evacuation hospitals were hastily brought up to the combat area to shorten the ambulance runs. In spite of the frequent and lengthy changes of station, medical battalions gave close support throughout the pursuit. For example, a clearing platoon of the 111th Medical Battalion, moving sixty miles from Bourg to Poligny on 6 September, was held up for four hours to allow armored and infantry elements to pass. Collecting stations were in almost continuous movement.

After the capture of Besançon, German resistance stiffened, and rain helped to further retard the advance. VI Corps units were nevertheless within twenty miles of Belfort when Seventh Army turned north again just after the middle of the month in response to SHAEF orders. Medical installations were still on the heels of the advancing lines when the Moselle crossing began on 21 September.

In the race to the Moselle each of the three divisions of VI Corps was supported by its own organic medical battalion. A collecting company and clearing platoon of the 58th Medical Battalion supported the 13th Field Artillery Brigade after 17 September. Units of the 10th and 11th Field Hospitals continued to accompany forward clearing stations of the divisions, while evacuation rearward was the responsibility of the 56th Medical Battalion. Until the rainy season began in mid-September, turning dirt roads into quagmires, litter bearers were used to only a minimum extent. The well-settled nature of the country also made it possible to site clearing stations much of the time in buildings.

The corps surgeon's office remained close to the front throughout the period, moving from Aspres to Salins, twenty miles south of Besançon on 6 September. Headquarters were in Vesoul by the 16th and on 22 September moved to Plombières.

Casualties during September were more from disease than from battle wounds, with respiratory ailments and exhaustion making substantial inroads. Trench foot cases began to appear before the end of the month. Admissions by the three division clearing companies totaled 11,805, of which 4,101 were battle wounds. Of the aggregate admissions, 1,136, or approximately 10 percent, were prisoners of war.

Hospitalization in the Army Area

Hospitalization on the Beaches

Until the base organization, with its fixed hospitals, could establish itself in southern France, it was necessary for Seventh Army to leave some hospital facilities in the beach area to care for service troops and for replacements and reinforcements staging in the vicinity, as well as to provide transient beds for those being evacuated to Italy. This function fell in the first instance to the 58th Medical Battalion, which reverted to Army control on D plus 2, and was reattached to the beach control group.[11]

When the last of the assault clearing stations closed on 21 August, a provisional hospital was opened by the clearing company of the 58th Medical Battalion in the Hotel du Golf at Beauvallon, a resort village between St. Tropez and Ste. Maxime. One collecting company remained at Ste. Maxime, operating a smaller unit that served as an annex to the main hospital. Both units were relieved on 4 September by the 164th Medical Battalion, which continued to operate the two facilities until fixed hospitals came into the area toward the end of the month. During the period 24 August–1 September, twelve French medical officers and a Senegalese clearing platoon were attached to the Beauvallon hospital, the majority of admissions at that time being French troops and German prisoners.

After being relieved by the 164th Medical Battalion, the 58th established another provisional hospital in the Hotel Hermitage in Nice, primarily for the support of the 1st Airborne Task Force and the 1st Special Service Force then fighting along the Italian border. This hospital was still in operation when all military units in southern France were formally transferred from the Mediterranean to the European Theater of Operations.

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[11] Sources for this section are: (1) Annual Rpt, Surg, Seventh Army, 1944; (2) After Action Rpt, Surg, Seventh Army, 15 Aug–31 Oct 44, an. 278; (3) Annual Rpt, Surg, VI Corps, 1944; (4) Unit rpts of the individual med units mentioned in the text.

Between 11 and 30 September the 675th Medical Collecting Company of the 164th Medical Battalion operated a provisional station hospital in Marseille—the only American hospital facility in that city. The hospital was caring for 200 patients when it was relieved by the 80th Station Hospital on 30 September.

The provisional hospitals in the landing areas were augmented late in August by 750-bed evacuation hospitals, which were brought in according to schedule. The 9th Evacuation, which landed on 25 August, went immediately into the combat zone, but the 51st and 59th Evacuations, which arrived at the same time, and the 27th, which reached southern France on 30 August, were retained initially in the coastal area. Original plans had called for three 750-bed evacuation hospitals for the support of VI Corps and two to back up the forward units of Army B. After the capture of Marseille, however, French medical commanders found it possible to make greater use of local hospitals than had been anticipated, and all four of the larger evacuation hospitals were used primarily for U.S. troops.

The 51st Evacuation opened at Draguignan on 27 August. Its personnel served in a captured German hospital at the site while their own tents were being erected. The hospital remained at Draguignan until 20 September. The bulk of its admissions were from the 1st Airborne Task Force, received both directly and through the provisional hospital at Nice. The staff of the 51st was augmented during this period by 18 medical officers, a nurse, and 19 technicians attached from other organizations. Approximately 2,000 patients were cared for.

The 59th Evacuation Hospital opened on 28 August at Carpentras near the site about to be vacated by the 3d Division clearing station. The hospital remained in the area until 7 September, taking a total of 611 patients and performing 222 surgical procedures in the 10 days of operation.

The 27th Evacuation operated at Bouc-bel-Aire, a few miles south of Aix-en-Provence from 1 September to 20 September. At this site it was the closest U.S. hospital to Marseille, where it operated a prophylactic station and gave dispensary service and station hospital care to all U.S. troops in the area. In addition to U.S. Army personnel, the 1,169 patients treated during the twenty days of operation at Bouc-bel-Aire inincluded French troops and civilians, and American and British sailors, both naval and merchant marine.

Hospitalization in the Combat Zone

The 10th and 11th Field Hospitals, operating in 50-bed units rather than the 100-bed units used in Italy, served throughout the campaign as forward surgical hospitals, remaining close to, and moving with, the division clearing stations. They were backed up as closely as transportation and available sites permitted by the 400-bed evacuation hospitals and later by the larger evacuation units. During the period of rapid movement, however, the field units were often far ahead of any evacuation hospital support. On these occasions, clearing platoons of the 56th Medical Battalions were used to increase bed capacity.[12]

The speed of the campaign up to late September necessitated frequent and long moves, with advance reconnaissance to the front lines themselves in search of hospital sites. The 400-bed evacuations were generally able to move by echelons with their own organic transportation, but the 750-bed evacuations had to rely on Seventh Army for trucks, which were not always available when needed. (*See Maps 31, 32, 33.*)

Long evacuation lines to the rear meant that hospitals were often overcrowded, while periods of intense combat activity placed a severe strain upon surgical staffs and postoperative facilities. It was frequently necessary to leave holding units behind to care for nontransportable patients when hospitals moved forward. All of the evacuation hospitals used civilian personnel in various capacities, the most frequent being as litter bearers.

The first evacuation hospital to move away from the landing beaches was the 93d, which advanced forty-five miles northwest from Plan de la Tour to Barjols on 22 August. For a few days, while elements of the 45th Division were forcing a crossing of the Durance River just north of Barjols and fighting their way toward Sisteron, the hospital was busy, but was soon left with little to do.

August 25 saw the 11th Evacuation leap ahead 128 miles from Le Muy to Aspremont in support of the forces fighting from Montélimar to Crest. In 15 hours after receiving movement orders, the hospital had evacuated 300 patients, dismantled and packed its equipment, and was on the road. The first patient was received at the new site just 18 hours after the hospital had closed at the old. Three hundred patients were admitted on the first day of operation at Aspremont.

The 750-bed 9th Evacuation Hospital, which arrived combat-loaded on 25 August, was sent immediately to the support of the 11th. Proceeding in 4 motor convoys, the 9th moved to a site at Beaumont, 30 miles beyond Aspres on the road to Crest, and began receiving patients at 0800, 28 August, just 54 hours after touching French soil. Two hundred and sixty patients were received and 39 surgical operations performed in the first 24 hours at Beaumont.

On the first day of September the 93d Evacuation, moving in three echelons with its own organic transportation, opened at Rives, 20 miles northwest of Grenoble and 180 miles from the hospital's previous site at Barjols. Between noon and midnight, 1 September, 127 patients were admitted and 28 surgical procedures performed. The move was completed on 5 September, the hospital remaining open at Barjols until the last echelon was ready to leave. (*Map 31*)

The 95th Evacuation was the next Seventh Army unit to leapfrog from the rear to the most forward position. The hospital left Gonfaron on 3 September, its personnel spending the night as guests of the 9th at Beaumont. The intention had been to set up about 50 miles beyond that point, but the front lines had already moved so far forward that a new reconnaissance was necessary. The site finally designated by the VI Corps surgeon was at St. Amour, more than 300 miles by

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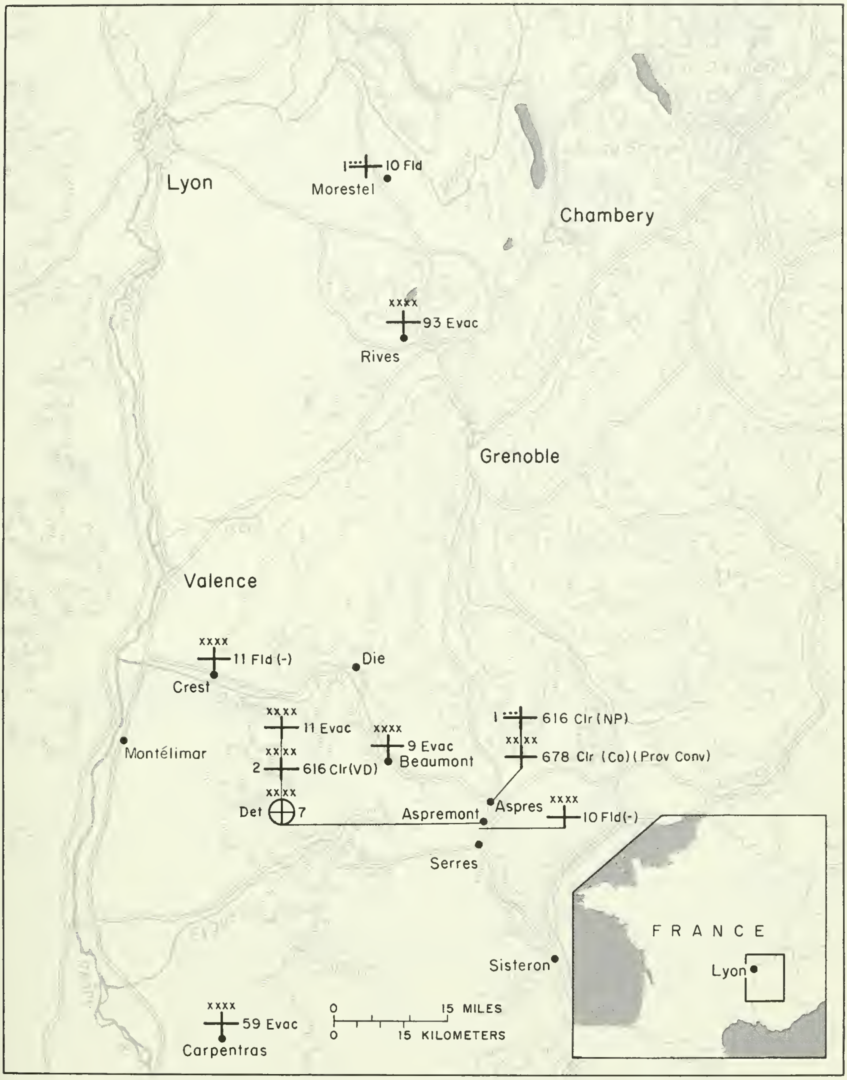
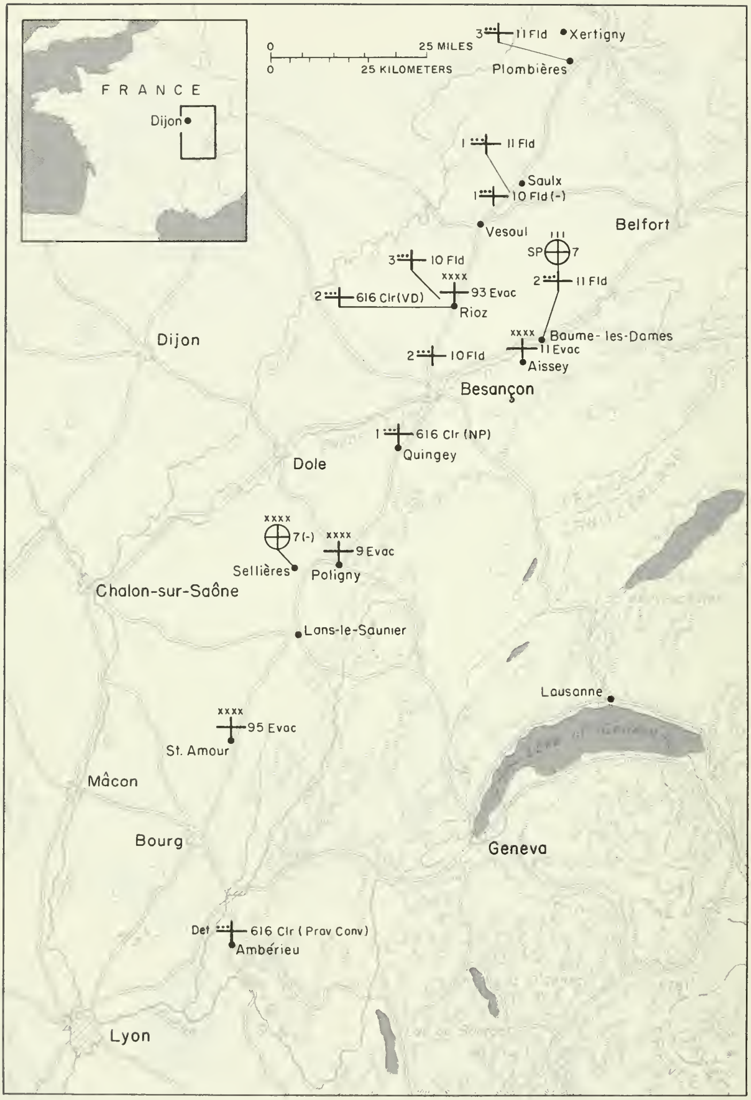
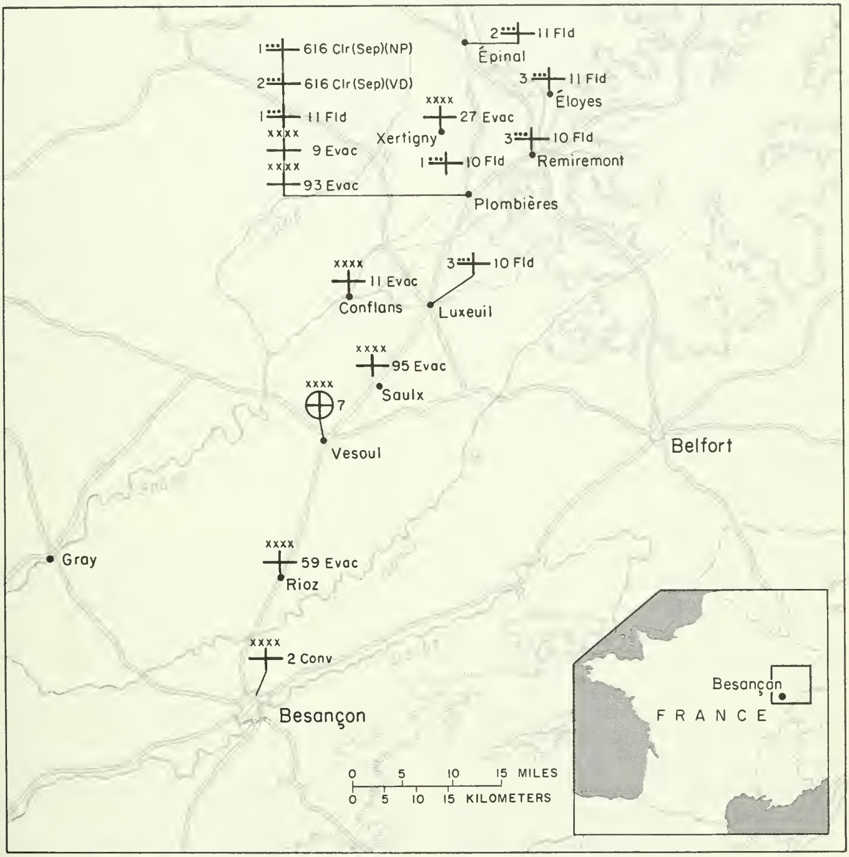
[12] Ltr, Col Rollin L. Bauchspies, USA (Ret), to Col Coates, 15 Apr 59, commenting on preliminary draft of this volume. Colonel Bauchspies was VI Corps surgeon.


Lyon
I 10 Fld
Morestel
Chambery
XXXX
93 Evac
Rives
Grenoble
Valence
XXXX
11 Fld (-)
Crest
Die
XXXX
11 Evac
XXXX
9 Evac
Beaumont
XXXX
2 616 Clr(VD)
Montélimar
XXXX
Det 7
I 616 Clr (NP)
XXXX
678 Clr (Co) (Prov Conv)
Aspres
Aspremont
XXXX
10 Fld(-)
Serres
Sisteron
XXXX
59 Evac
Carpentras
0 15 MILES
0 15 KILOMETERS
FRANCE
Lyon

Map 31—Seventh Army Hospitals and Medical Supply Dumps, 1 September 1944


FRANCE
Dijon
0
25 MILES
0
25 KILOMETERS
3 11 Fld
Xertigny
Plombières
1 11 Fld
Saulx
1 10 Fld (-)
Vesoul
Belfort
III
SP
7
3 10 Fld
XXXX
93 Evac
2 11 Fld
2 616 Clr (VD)
Rioz
XXXX
Baume-les-Dames
11 Evac
Aissey
Dijon
2 10 Fld
Besançon
1 616 Clr (NP)
Quingey
Dole
XXXX
7 (-)
XXXX
9 Evac
Sellières
Poligny
Chalon-sur-Saône
Lons-le-Saunier
Lausanne
XXXX
95 Evac
St. Amour
Mâcon
Bourg
Geneva
Det 616 Clr (Prov Conv)
Ambérieu
Lyon

MAP 32—Seventh Army Hospitals and Medical Supply Dumps, 15 September 1944


1 616 Clr(Sep)(NP)
2 616 Clr(Sep)(VD)
1 11 Fld
XXXX 9 Evac
XXXX 93 Evac
2 11 Fld
Épinal
3 11 Fld
Éloyes
XXXX 27 Evac
Xertigny
3 10 Fld
Remiremont
1 10 Fld
Plombières
XXXX 11 Evac
Conflans
3 10 Fld
Luxeuil
XXXX 95 Evac
Saulx
XXXX 7
Vesoul
Belfort
Gray
XXXX 59 Evac
Rioz
XXXX 2 Conv
Besançon
0 5 10 15 MILES
0 5 10 15 KILOMETERS
Besançon
FRANCE

MAP 33—Seventh Army Hospitals and Medical Supply Dumps, 30 September 1944

road from the landing area. The 95th spent the night of 4 September in bivouac at the 3d Division clearing station near Ambérieu, opening at St. Amour at 0900, 5 September.

As the most forward evacuation hospital, the 95th carried a heavy load of surgical cases for the next few days. At the same time, it was necessary to hold patients overlong owing to the difficulties of evacuation. The railroads had not yet been restored to service and motor transportation was critical. The situation was somewhat eased by the beginning of air evacuation from Ambérieu on 9 September, but fuel shortages and bad weather combined to make flight schedules uncertain. On the credit side, the hospital was deluged with gifts of eggs, chickens, rabbits, and ducks from the local farmers, whose normal city markets were temporarily cut off.

The 9th Evacuation, meanwhile, had closed at Beaumont, and on 8 September opened at Poligny, 40 miles beyond St. Amour and 235 miles from the Beaumont site. At Poligny the 9th received 578 patients in the first 30 hours of operation. Surgical teams worked in 16-hour shifts.

The next forward move was made on 11 September when the 11th Evacuation opened at Aissey, 15 miles east of Besançon, after a 265-mile jump from Aspremont. With the aid of borrowed trucks, the first echelon was able to carry 300 beds, all surgical nurses, and half the officers of the medical service as well as all those of the surgical service. The hospital admitted 158 patients during the first 5 hours at Aissey.

On 15 September the 93d Evacuation moved up from Rives to Rioz, 20 miles north of Besançon. Using 15 borrowed trucks and 25 ambulances of an attached ambulance company, the first 2 of 3 echelons were able to move together. The hospital opened at 1300 on 16 September. By midnight 219 patients had been received and 27 operations performed. The 185-mile move was completed on 17 September. (*Map 32*)

The 59th Evacuation Hospital, which had closed at Carpentras on 7 September, also opened in Rioz after a 10-day wait for transportation. For the 59th the move covered 240 miles. September 17 was also the opening date for the 2d Convalescent Hospital in Besançon, though part of its equipment remained on the docks at Marseille where organic vehicles had been commandeered for more urgent uses. The unit was caring for 1,200 patients before all of its equipment was brought up by its remaining vehicles shuttling between Besançon and Marseille.[13]

The 95th Evacuation again became the most forward Seventh Army hospital on 18 September when it opened at Saulx, 25 miles northeast of Rioz. The 11th moved from Aissey to Conflans, 10 miles north of Saulx, 3 days later; and on 23 September the 9th Evacuation opened at Plombières on the Moselle. The first contingent of the 27th Evacuation arrived at Xertigny, about eight miles north of the 9th, the following day, but the hospital was not in full operation before the end of the month. All but the advance detachment of the 27th made the 450-mile jump from Bouc-bel-Aire by rail. On 25

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[13] In the Southern France Campaign, the 2d Convalescent Hospital carried only 2,000 rather than its former 3,000 beds and was organized to operate in two independent sections of 1,000 beds each.

September the 93d Evacuation joined the 9th in the vicinity of Plombières. (*Map 33*)

With the single exception of the 51st Evacuation, all Seventh Army hospitals were now concentrated close to the main highway north from Besançon to Épinal. The 51st was packed at Draguignan and ready to move by 23 September, but transportation was not available until early October.

During the last two weeks of September almost continuous rain and cold hampered hospital movements and made operation a constant struggle with the elements. All tents had to be ditched, access roads graveled, and tent pegs periodically reset in the soft ground. Heating facilities were often inadequate to keep patients warm.

Special Hospital Facilities

In addition to field and evacuation hospitals, Seventh Army maintained provisional hospitals for the specialized treatment of venereal disease and neuropsychiatric cases and, until the 2d Convalescent Hospital got into full operation, a provisional convalescent hospital as well. The venereal disease and neuropsychiatric hospitals had been planned in advance, on the pattern of those set up by Fifth Army in Italy, and the clearing platoons designated to operate them had been given special training as well as specialist personnel attached from other units. The convalescent hospital was an afterthought, made necessary by the unexpectedly rapid advance of the lines and the late date predetermined for phasing in the regular convalescent facility.

The convalescent hospital was the first of the three specialized units to be established, though the procedure was very informal. On 18 August—D plus 3—the 682d Medical Clearing Company of the 52d Medical Battalion, then at Plan de la Tour, arranged to hold the lightly wounded and mildly ill who could return to duty in a short time if they could be kept off the hospital ships bound for Italy. The project grew. Beds and equipment were borrowed wherever they could be had, and personnel were diverted from other duties. Within a week the unit was operating 400 convalescent beds and was unable to perform its normal functions.

The 164th Medical Battalion, less one platoon of the 638th Medical Clearing Company already in France, arrived on 26 August, and the following day a collecting company of the 164th took over the convalescent hospital, which moved forward to Aspres on the last day of the month.

The venereal disease and neuropsychiatric hospitals, meanwhile, had both been established according to plan on 20 August by the 616th Medical Clearing Company of the 181st Medical Battalion, released from its beach assignment the previous day. Both hospitals were organized as 250-bed units, and both opened at Le Luc, close to the Gonfaron site of the 95th Evacuation Hospital. The neuropsychiatric hospital carried a light patient load at this time, but the venereal disease unit found it necessary almost immediately to expand capacity to 375 beds to care for a backlog of cases arising from contacts in Italy.

By definition both of these specialized hospitals were forward units, and both were moved to the Aspres area at the end of the month. By this time long evacuation lines, scattered forces, and acceler-

TABLE 24—ADMISSIONS AND DISPOSITIONS, SEVENTH ARMY MEDICAL INSTALLATIONS, 15 AUGUST–29 SEPTEMBER 1944

	Admitted to Hospital	Died in Hospital	Evacuated to COMZ	Returned to Duty	Remaining in Hospital [a]
Total	28,128	320	13,075	9,384	5,349
U.S. Army:					
Disease	11,596	3	3,069	6,773	1,751
Injury	2,470	23	699	906	842
Battle casualty	6,714	135	4,609	850	1,120
Total U.S. Army	20,780	161	8,377	8,529	3,713
U.S. Navy	[b] 220	4	85	131	
Allies	2,454	30	1,673	329	422
Enemy	4,508	115	2,923	[c] 332	1,138
Civilian	166	10	17	[d] 63	76

[a] Calculated from preceding columns.

[b] Figure for total treated, taken from Annual Report, Surgeon, Seventh Army. Equivalent to admissions, since all Navy patients were disposed of within the period covered by the table. Figure of 141 for admissions given in After Action Report is obviously incorrect.

[c] To PW enclosure.

[d] Discharged from hospital.

Source: After Action Rpt, Surg, Seventh Army, 15 Aug–31 Oct 44, An. 278 (admissions only) Annual Rpt, Surg, Seventh Army, 1944.

ated build-up in the beach area had brought about an acute shortage of mobile medical units. The 164th Medical Battalion was given a beach assignment, and without advance notice the 616th Clearing Company was directed to take over the provisional convalescent hospital on 4 September. The hospital at that time held almost 500 patients, but the 616th had only 3 officers and 8 enlisted men who could be spared from the venereal disease and neuropsychiatric centers. The 11 men staffed the convalescent hospital until additional personnel from collecting companies of the parent medical battalion could be rushed to their aid.

The neuropsychiatric hospital moved forward to Rives on 4 September; to Samson, midway between Poligny and Besançon, six days later; and on 24 September joined the growing group of medical installations around Plombières on the Moselle. The venereal disease center moved to St. Jean de Paris, a suburb of Ambérieu, on 6 September, where the convalescent hospital had been established the day before; to Rioz on the 13th; and to Plombières on 28 September. The convalescent hospital, its usefulness ended with the establishment of the 2d Convalescent in Besançon, closed on 25 September. An annex, operated at Rioz in connection with the venereal disease hospital, closed two days later.

The convalescent hospital had reached a peak load of more than 800 patients, while the neuropsychiatric center, reflecting the growing severity of combat and the deterioration of the weather, was caring for 300 patients by the end of the month.

A second venereal disease center was operated in connection with the provisional hospital at Beauvallon by the 638th Medical Clearing Company from 4 September. This center was still in operation when the 164th Medical Battalion passed from army to base section control early in October.

Medical Summary: Seventh Army

Table of Organization bed strength in Seventh Army hospitals by the end of September was 5,000, not counting clearing stations and special hospitals operated by clearing companies, plus 2,000 convalescent beds. Admissions to Seventh Army medical installations, including clearing stations, totaled more than 28,000 for the period 15 August–30 September, of which 13,000 were evacuated to the communications zone and more than 9,000 were returned to duty. (*Table 24*) Troop strength by the end of September was approximately 140,000.

Evacuation From Seventh Army

Evacuation Within the Combat Zone

When VI Corps pushed inland from its landing beaches, evacuation of division clearing stations was carried out by the 56th Medical Battalion. Highways were generally excellent, but through much of the advance the terrain was mountainous and until the concentration of evacuation hospitals along the Moselle in late September, distances were great. To minimize the factor of distance as much as possible, holding hospitals were set up during periods of rapid advance by a platoon of the corps clearing company and a field hospital unit to retain patients until an evacuation hospital could move forward.[14]

The battalion maintained liaison with VI Corps through an officer stationed in the corps surgeon's office, and with the evacuation hospitals through a noncommissioned officer stationed in the registrar's office of each hospital serving the corps. Bed status reports from each evacuation hospital were submitted every four hours, or oftener if the situation demanded, the reports being carried by ambulance drivers or telephoned to battalion headquarters. This information permitted the corps surgeon to direct the flow of patients to the evacuation hospitals in terms of current information.

Medical support for the 1st Airborne Task Force followed an unorthodox pattern, the three collecting stations of the 676th Medical Collecting Company being comparable to small clearing stations. Casualties were evacuated by ambulances of the company to the provisional hospital operated by the 514th Medical Clearing Company of the 58th Medical Battalion in Nice. After 6 October autorail trains staffed by personnel of the 676th made daily runs between the collecting stations and the hospital. The hospital was cleared by the 58th Medical Battalion.

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[14] Principal sources for this section are: (1) After Action Rpt, Surg, Seventh Army, 15 Aug–31 Oct 44; (2) Annual Rpt, Med Sec, MTOUSA, 1944; (3) Annual Rpt, Surg, Seventh Army, 1944; (4) Annual Rpt, Surg, VI Corps, 1944; (5) Unit rpts of the med units mentioned in the text.

Carrying D-day Wounded to the Beach for Trip by LST to Corsica

Evacuation to the Communications Zone

During the first day of the invasion of southern France, casualties were evacuated from the beach clearing stations by small craft to the transports and carried by LST to Ajaccio, Corsica, where the 40th Station Hospital was prepared to receive them and to send the more serious cases on to Naples by air. A little over 300 reached Ajaccio by LST on 15 August.[15]

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[15] According to the Seventh Army Surgeon's After Action Report for the period 15 August–31 October 1944, only 380 patients were evacuated from southern France by LST. (See Table 26, below.) The 1944 annual report of the Northern Base Section surgeon, however, says 489 evacuees from the Riviera beaches were received by the 40th Station Hospital, and the report of the hospital itself for the same period puts the figure above 500. The presumption is that one or more of the hospital ships discharged some critical cases at Ajaccio to be flown to Naples, but there is a tendency in Army reports to lump all sea evacuation as by hospital ship. It may be that the LST total was actually considerably higher than indicated. For example, the report of the Naval Commander, Western Task Force, page 368, says that approximately 1,800 casualties were evacuated to hospital ships during the period of the automatic schedule (D plus 1 through D plus 6), whereas the ETMD report for August 1944 gives a figure of 3,262 for the same period.

General sources for this section are: (1) ETMD, MTO, for Aug 1944; (2) After Action Rpt, Surg, Seventh Army, 15 Aug–31 Oct 44; (3) Rpt of Naval Comdr, Western Task Force, Invasion of Southern France; (4) Annual Rpt, Surg, Seventh Army, 1944; (5) Annual Rpt, Med Sec, MTOUSA, 1944; (6) Unit rpts of med units mentioned in the text.

Three hospital ships arrived off the landing beaches on D plus 1 as planned, although they were not there as early in the day as had been expected. The relatively small number of casualties, however, made it possible to hold in the clearing stations those patients whose condition required the better accommodations of the hospital ships. The automatic schedule continued through 21 August—3 ships on D plus 2, one on D plus 3, 2 each on D plus 4 and D plus 5, and one on D plus 6.

Vessels used during the first 3 days carried surgical teams drawn from personnel of the 3d, 36th, and 43d General Hospitals, and the 59th Evacuation Hospital, all on the DRAGOON troop list. The USAHS *John Clem,* smallest of the hospital ships, carried only one surgical team, while the *Acadia,* with a capacity of 788 patients, carried 3. The *Shamrock, Thistle, Algonquin, Chateau Thierry,* and *Emily Weder* carried 2 surgical teams each.

After D plus 6, hospital ships were sent into the area on a one-a-day basis until 28 August, and thereafter at the request of the Seventh Army surgeon. One ship was held in continuous readiness at Ajaccio. Until D plus 5 hospital ships called at all three landing beaches, but beginning on D plus 6 all evacuees were taken by ambulance to the clearing station of the 58th Medical Battalion at Ste. Maxime, where the ships were loaded. Through 21 August all hospital ships discharged at Naples with no segregation of casualties by nationality. From 22 August through 29 August vessels loaded to 60 percent or more with French casualties or prisoners of war were sent to Oran.

With the fall of Marseille and Toulon, enough fixed hospital beds became available to the French forces to make evacuation out of France unnecessary. This factor, combined with the beginning of air evacuation on D plus 7, greatly reduced the need for hospital ships and none were requested by Seventh Army after 30 August.

Air evacuation from southern France was carried out by the 802d and 807th Medical Air Evacuation Transport Squadrons, which continued at the same time to clear forward areas in Italy. Beginning on 22 August, flights were made initially from the most forward airfields available directly to Naples and occasionally to other Italian bases. Airfields in the vicinity of the landing beaches—St. Tropez, Le Luc, and Aix-en-Provence—were quickly left behind. Sisteron and Crest both served for a time, and flights began from Ambérieu northwest of Lyon on 9 September.

By this date, the weather was becoming uncertain and the distances to Italian bases were lengthening. With the great air base at Istres, about twenty-five miles northwest of Marseille available, flights were directed there, where patients could be relayed on by air to Naples or sent to one of the fixed hospitals moving into the Rhône delta. Before the end of September air evacuation in France had been largely reduced to a single route, from Luxeuil close to the bulk of Seventh Army medical installations, to Istres.

Air evacuation from France to Italy, and from the Seventh Army area to Istres, for the period 22 August through 7 November, when the two air evacuation squadrons from Italy were withdrawn, is summarized in Table 25.

Seventh Army evacuation hospitals from their first establishment were

TABLE 25—AIR EVACUATION FROM SEVENTH ARMY AND DELTA BASE SECTION
22 AUGUST—7 NOVEMBER 1944

From	To	Air Miles	802d MAETS	807th MAETS	Total
Grand total			14,047	3,208	17,255
Ramatuelle (St. Tropez)	Naples	330	455	307	762
Le Luc	Naples	330	54	18	72
Sisteron	Naples	380	338	365	703
Aix-en-Provence	Naples	370([a]508)	131	223	354
Istres (W. Marseille)	Naples	390([a]528)	2,713	1,756	4,469
Crest	Naples	465([a]615)	111	102	213
Ambérieu (NE Lyon)	Naples	520([a]669)	199	180	379
Le Luc	Rome	220	162	138	300
Istres	Rome	268([a]418)	62	18	80
Crest	Rome	320		16	16
Ambérieu	Rome	390		11	11
Aix-en-Provence	Pisa	250		18	18
Total evacuated to Italy by air			4,225	3,152	7,377
Montélimar	Istres	70	6		6
Le Bron	Istres	155	19		19
Ambérieu	Istres	171	1,014	39	1,053
Dole	Istres	247	664		664
Besançon	Istres	265	290		290
Luxeuil	Istres	305	7,829	17	7,846
Total evacuated to Istres by air			9,822	56	9,878

[a] By way of Corsica.

Source: Annual Rpts, 802d and 807th MAETS, 1944.

cleared by the 52d Medical Battalion. Patients were carried by ambulance to the Riviera beaches for hospital ship evacuation, to holding units at airfields or railheads, or to fixed hospitals as these became available close to the front. Air evacuation holding hospitals were operated by the clearing companies of the 52d and 164th Medical Battalions. The largest of these was at Istres, operated by the 52d Medical Battalion until 17 September and thereafter by the 164th. More than 1,000 beds were available, with a daily patient turnover often greater than 600. The fall rains made flight schedules erratic with a highly variable patient census as a consequence. Property exchange with air evacuation units was a continuous problem because the personnel carriers used generally had full loads on the incoming trip, and often made one or more trips in Italy before returning to France.

As soon as the rail lines were back in operation, hospital trains were pressed into service for evacuating forward hospitals. The 42d Hospital Train, veteran of both North Africa and Italy, made its first run between Marseille and the railhead at Mouchard, about twenty miles southwest of Besançon, on 25 September. The 66th Hospital Train, also a veteran unit, though with less service in the theater than the 42d, left Besançon for Marseille on its initial run on 9 October. Both trains used reconditioned French passenger cars.

The slower pace of the campaign after crossing the Moselle, and the relatively stable front, permitted the establishment of fixed hospitals well forward before the end of October, with ambulance evacuation taking the place of air and rail for the shorter runs.

Throughout the campaign it was possible to handle the tremendous job of clearing army hospitals over long distances from a rapidly moving front only by constant juggling of the inadequate number of ambulance platoons available. Ambulances were kept going around the clock and on occasion passing trucks were commandeered to carry patients to the rear.[16]

Table 26 summarizes evacuation from forward installations to the communications zone, including Italian and North African base sections and those established in France, for the period of Mediterranean theater jurisdiction over DRAGOON.

LCI ALONGSIDE THE SHAMROCK *off St. Tropez, 17 August. The men will be transferred to the hospital ship in the basket, left foreground.*

Extension of the Communications Zone

Before DRAGOON could be transferred completely to the European Theater of Operations, it was necessary to free the operation of its logistical dependence on Italy and North Africa. It was therefore contemplated throughout the planning phase that the communications zone would be extended to southern France at the earliest possible date. To this end the Coastal Base Section was organized in Naples early in July.

Organization of the Base Sections

The Coastal Base surgeon, Colonel Bishop, and key members of his staff were in close touch with the Seventh Army surgeon throughout the planning stage, and were early arrivals in France. The first echelon of the medical section came ashore between D plus 1 and D plus 10, and the entire section was in France by 29 August. The early arrivals remained in the landing areas to work with the beach control group, and the rear echelon set up a headquarters in

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[16] See, e.g., 9th Evac Hosp, Med Hist Data, 1 Jan–31 Oct 44.

TABLE 26—SUMMARY OF EVACUATION TO THE COMMUNICATIONS ZONE
15 AUGUST–3 NOVEMBER 1944

Week Ending	LST	Hospital Ship	Plane	Motor Ambulance	Hospital Train	Total
Total	380	6,277	10,101	8,480	1,928	27,166
18 August	324	1,905	....	....	....	2,229
25 August	56	3,254	314	....	....	3,624
1 September	....	1,118	707	....	....	1,825
8 September	....	....	1,008	....	....	1,008
15 September	....	....	656	....	....	656
22 September	....	....	1,110	926	....	2,036
29 September	....	....	1,218	199	280	1,697
6 October	....	....	1,130	1,673	272	3,075
13 October	....	....	1,690	446	276	2,412
20 October	....	....	1,755	242	699	2,696
27 October	....	....	513	1,811	401	2,725
3 November	....	....	....	3,183	....	3,183

Source: Compiled from ETMD, MTO, for Aug 44; and After Action Rpt, Surg, Seventh Army, 15 Aug–31 Oct 44.

Marseille. The medical section was already supervising rear army installations as well as evacuation and supply activities on the beaches when the base section formally assumed operational control of the coastal region of southern France on 9 September.[17]

By that date, Seventh Army was beyond Besançon in its spectacular dash toward the Rhine, and the communications zone organization appeared inappropriately named. The Coastal Base Section became the Continental Base Section on 12 September 1944, and as of 1 October was split into the Delta Base Section, with headquarters in Marseille, and the Continental Advance Section (CONAD) with headquarters in Dijon. Colonel Bishop continued as surgeon of CONAD while Colonel Jeffress became Delta Base surgeon.

Both medical section organizations were similar to those elsewhere in the Mediterranean, with functional subdivisions for administration, personnel, hospitalization, evacuation, medical records, medical supply, dental, and veterinary. The Delta Base medical section was primarily concerned with incoming supply, evacuation to Italy and to the zone of interior, and hospitalization of service troops, long-term patients, and prisoners of war. The medical section of CONAD was primarily concerned with the more immediate support of Seventh Army and of the 6th Army Group.

Both Delta Base and CONAD came under the general jurisdiction of the Southern Line of Communications (SOLOC), on 20 November, when all COMZ functions in southern France

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[17] Sources for this section are: (1) Annual Rpts, Med Sec, Delta Base Sec, 1944, 1946; (2) Monthly Rpt, Delta Base Sec, Oct 1944; (3) Annual Rpt, Continental Adv Sec, 1944; (4) CONAD History, 1944–1945; (5) Annual Rpt, Med Sec, MTOUSA, 1944; (6) Hist of Med Sec, Hq, COMZ NATOUSA; (7) Ltr, Gen Stayer, Surg, NATOUSA, to Gen Kirk, TSG, 26 Sep 44.

Table 27—Establishment in Southern France of Fixed Hospitals From North Africa, Italy, and Corsica

Hospital	T/O Beds	From [a]	Arrival, Port of Debarkation [b]		Initial Site	Opened
			Scheduled	Actual		
36th General...	2,000	Caserta........	9 Sep	9 Sep	Aix-en-Provence...	17 Sep
46th General...	1,500	Assi Bou Nif....	9 Sep	8 Sep	Besançon.........	20 Sep
78th Station...	500	Caserta........	14 Sep	13 Sep	St. Raphaël......	19 Sep
80th Station...	500	Bizerte.........	14 Sep	14 Sep	Marseille.........	30 Sep
43d General....	1,500	Assi Bou Nif....	14 Sep	19 Sep	Aix-en-Provence...	25 Sep
23d Station....	500	Assi Bou Nif....	19 Sep	19 Sep	Épinal...........	10 Nov
3d General.....	1,500	Caserta........	29 Sep	29 Sep	Aix-en-Provence...	9 Oct
180th Station..	250	Calvi..........	29 Sep	13 Sep	Dijon............	20 Oct
35th Station...	500	Cervione.......	29 Sep	20 Sep	Chalon-sur-Saône...	14 Oct
69th Station...	500	Assi Bou Nif....	29 Sep	18 Nov	Marseille.........	8 Dec
70th Station...	500	Naples.........	9 Oct	18 Oct	Marseille.........	1 Nov
51st Station....	500	Naples.........	9 Oct	11 Oct	Auxonne.........	4 Nov
21st General...	2,000	Naples.........	14 Oct	4 Oct	Mirecourt........	21 Oct
23d General....	2,000	Naples.........	14 Oct	18 Oct	Vittel............	5 Nov

[a] Last operating site.
[b] Date when bulk of personnel and equipment docked.
Source: Compiled from annual rpts of hospitals included.

passed finally from MTO to ETO. The SOLOC medical section was essentially the medical section of COMZ, NATOUSA, which had been functioning in Naples since February 1944, with Colonel Shook as surgeon.[18] An advance echelon of the COMZ medical section had been established in Dijon early in October by Colonel Cocke, Colonel Shook's deputy.

Establishment of Fixed Hospitals

U.S. fixed hospitals with an aggregate Table of Organization strength of 14,250 beds were on the DRAGOON troop list, to be phased in between D plus 25 (9 September) and D plus 60 (14 October). The installations included were drawn from North Africa, Italy, and Corsica. The unexpected speed with which Seventh Army moved north made the schedule unrealistic before the first hospital arrived. In only three instances, however, was it possible to advance the schedule, and these were balanced by others in which even the retarded landing dates originally fixed were not met. (*Table 27*) The accelerated pace of the campaign, moreover, brought such heavy demands for transportation that the establishment of hospitals was often unduly delayed after their arrival. Another delaying factor was the difficulty in locating suitable sites in a densely populated country at a season when tents could not be satisfactorily used.[19]

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[18] See pp. 323–26, above, 486–88, below.

[19] Sources of this section are the same as those for the preceding section, with the addition of unit reports of medical units mentioned in the text.

The first U.S. fixed hospital to operate in southern France was the 36th General, which took over a captured German hospital—originally a French tuberculosis sanatorium—at Les Milles near Aix-en-Provence on 17 September. Approximately 600 prisoner of war patients were in the hospital at that time, but these were concentrated in about half the ward area. Two days later the 36th General also began operating in Aix-en-Provence itself, in the buildings of a French psychiatric hospital. To avoid unnecessary dispersion of staff members, all surgical cases were handled at Les Milles, with medical cases going to Aix. (*Map 34*)

Both hospitals were turned over, with their patients, to the 43d General—Les Milles on 25 September and Aix on the 27th. The 3d General Hospital took over the installation in Aix-en-Provence on 9 October, taking 763 medical patients from the 43d at that time. The 43d General continued to administer the prisoner of war hospital at Les Milles in addition to its normal functions. The German hospital captured at Draguignan was consolidated with the Les Milles facility, which operated under U.S. supervision with German protected personnel. German enlisted men were used as litter bearers throughout the hospital.

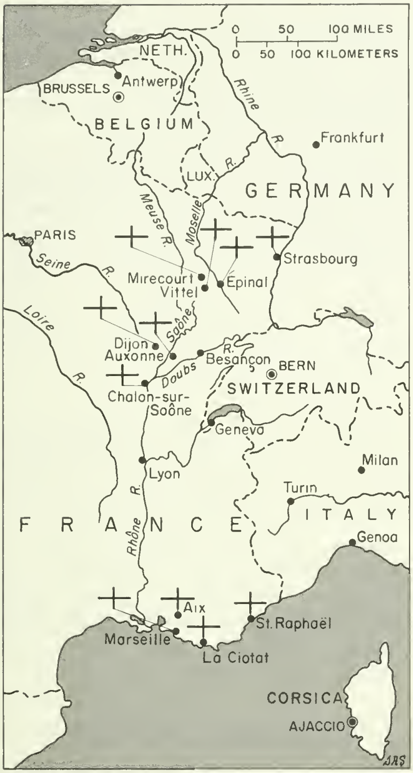
The 78th Station Hospital, meanwhile, had opened in a resort hotel in St. Raphaël on 19 September, and the 80th Station had relieved the 675th Medical Collecting Company, which had been operating a provisional hospital in the buildings of an old ladies' home in Marseille.

The first fixed hospital to open in the forward area, which would come under operational control of the Continental Advance Section on 1 October, was the 46th General, which was rushed at the request of the Seventh Army surgeon to Besançon. The hospital opened with a minimal portion of its equipment in the Caserne Vauban, a former French infantry barracks, on 20 September. The front was only a dozen miles away, and the 9th Evacuation Hospital, from which the first group of patients came, was at Poligny 40 miles to the rear. The patient census of the 46th General rose to almost 3,000 within 3 weeks.

The 36th General, after surrendering its two sites at Aix-en-Provence, was assigned to CONAD and opened at Dijon on 13 October in a former French cavalry barracks. The 36th had a census of 1,400 patients within a week. It was joined at Dijon on 20 October by the 180th Station, one of the few 250-bed units left in the theater.

On 14 October the 35th Station Hospital opened at Chalon-sur-Saône, south of Dijon, the accommodations again being a French *caserne,* or military barracks. A week later the 2,000-bed 21st General opened at Mirecourt, just west of the Moselle, in the unfinished plant of a large, modern French psychiatric hospital. The 51st Station, which had been functioning as a neuropsychiatric hospital in both Africa and Italy, continued the same specialty in France, opening at Auxonne on 4 November. In this case the military atmosphere of the French barracks that housed the unit was regarded as an asset.

The 23d General Hospital opened on 5 November at Vittel, so close to the front that its first 300 patients were received direct from Seventh Army by ambulance. The hospital was adequately housed in a group of resort hotel buildings. Last of the CONAD hospitals trans-


0 50 100 MILES
0 50 100 KILOMETERS
NETH.
Antwerp
BRUSSELS
BELGIUM
Rhine
R.
Frankfurt
LUX.
R.
GERMANY
Meuse R.
Moselle
PARIS
Seine
R.
Strasbourg
Mirecourt
Vittel
Épinal
Loire
Saône
Dijon
Auxonne
R.
Besançon
BERN
R.
Doubs
SWITZERLAND
Chalon-sur-Saône
Geneva
Milan
Lyon
Turin
R.
Rhône
FRANCE
ITALY
Genoa
Aix
St. Raphaël
Marseille
La Ciotat
CORSICA
AJACCIO

Map 34—Fixed Hospitals Transferred From MTO to ETO, 20 November 1944

Fixed Hospitals and Supply Units Transeferred From MTO to ETO, 20 November 1944

Delta Base Section

Aix-en-Provence
43d General, 25 September. 1,500 beds.
3d General, 9 October. 1,500 beds.
Marseille
80th Station, 30 September. 500 beds.
70th Station, 1 November. 500 beds.
69th Station, 8 December. 500 beds.
231st Medical Composite Battalion.
St. Raphaël
78th Station, 19 September. 500 beds.
La Ciotat
7607th Station (Italian), October. 500 beds.

Continental Advance Section

Chalon-sur-Saône
35th Station, 14 October. 500 beds.
Auxonne
51st Station, 4 November. 500 beds.
Dijon
36th General, 13 October. 2,000 beds.
180th Station, 20 October. 250 beds.
70th and 71st Medical Base Depot Companies.
Besançon
46th General, 20 Sepetmber. 1,500 beds.
Vittel
23d General, 5 November. 2,000 beds.
Épinal
23d Station, 10 November. 500 beds.
Mirecourt
21st General, 21 October. 2,000 beds.

ferred from MTO was the 23d Station, which opened in a school building at Épinal on 10 November, almost two months after its arrival in France.

Two late arrivals in Delta Base, the 69th and 70th Station Hospitals, completed the Dragoon troop list. The 70th opened in a French mental hospital in Marseille on 1 November and, because of the facilities its site afforded, became the principal center for handling closed-ward neuropsychiatric cases in Delta Base. The 69th Station did not arrive in France until 18 November and was not ready to receive patients until 8 December.

Counting the still inoperative 69th Station, there were 5,000 Table of Organization beds in Delta Base and 9,250 in CONAD as of 20 November 1944, when southern France passed completely to ETO control.

In addition to these fixed hospitals, the 7607th Station Hospital (Italian) opened at La Ciotat, on the coast between Marseille and Toulon, in October to care for personnel of Italian service units. Though nominally a 500-bed hospital, the 7607th operated 1,000 beds. The venereal disease center maintained by the 638th Medical Clearing Company of the 164th Medical Battalion at Beauvallon was shifted on 9 October to a staging area between Marseille and Aix-en-Provence, where it continued to carry on the same mission under Delta Base control. The 4th Medical Laboratory, which arrived in southern France on 9 September, served both base sections. The base laboratory, with the 6703d Blood Transfusion Unit attached, was located in Marseille; a mobile section consisting of one officer and four enlisted technicians, was sited in Dijon. Both sections occupied university laboratory buildings of functionally suitable design.

Evacuation From CONAD and Delta Base

As soon as the base sections were set up, they took over responsibility for clearing hospitals in the Army area and distributing the patients among the available hospitals. The base sections were also responsible for interbase transfers; Delta Base evacuated to the zone of interior, beginning in October.[20]

During October 1944, CONAD evacuated from its own hospitals to Delta Base, 1,325 patients by air, 1,496 by motor, and 871 by rail. In the same month, Delta Base transferred 2,808 patients to the Peninsular Base Section in Italy by air and 2,843 by sea, while 93 were evacuated by sea to the United States.

With fixed beds in the forward area still at a premium, CONAD followed no fixed evacuation policy, but cleared its hospitals to Delta Base as rapidly as transportation and the condition of the patients allowed. Toward the end of October, Delta Base established a 45-day policy for evacuation to PBS, retaining all patients expected to recover in less than that time.

Delta Base continued to evacuate some patients to Italy until 20 November, the totals for the period 1–20 November being 29 by air and 433 by hospital ship. The slack was taken up by the greatly increased number of beds available in southern and eastern France by early November, and by the beginning of direct air evacuation from CONAD to the United Kingdom on the 12th of that month.

Medical Supplies and Equipment

By the time medical supplies began coming across the landing beaches of southern France in appreciable quantities about D plus 3, the army and base responsibilities in the supply area were being differentiated. Both the Seventh Army medical supply officer, who was also commanding officer of the 7th Medical Depot Company, and the Coastal Base Section medical supply officer on temporary duty with Seventh Army came ashore on D plus 1. The three beach dumps were taken over from the beach medical battalions by the advance section of the 7th Medical Depot Company on 16–18 August.[21] Three days later a single point for the receipt of incoming medical supplies was established at Ste. Maxime. At this time supervision passed to the base supply organization, although 21 enlisted men of the advance section, 7th Medical Depot Company, were detached to help operate the dumps for the beach control group. These men did not rejoin their own unit until 15 September.

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[20] This section is based primarily on: (1) Annual Rpt, Med Sec, CONAD, 1944; (2) Annual Rpt, Med Sec, Delta Base, 1944; (3) Annual Rpt, Med Sec, MTOUSA, 1944.

Seventh Army Medical Supply

The first forward issue point for Seventh Army was set up at Le Cannet, near Le Luc, on 21 August, moving to St. Maximin, about 20 miles east of Aix-en-Provence, 2 days later. The main body of the 7th Medical Depot Company joined the advance section there on 25 August. On 29 August the base section of the depot moved to Meyrargues, 10 miles north of Aix, while one storage and issue platoon jumped forward to Aspremont in the vicinity of VI Corps' forward medical installations.[22]

It was at this time that the battle of Montélimar came to its indecisive close and Seventh Army raced ahead to cut off the retreating enemy before he could slip through the Belfort Gap. In this stage of the campaign, medical supply dumps were hard pressed to keep within any kind of reasonable distance of the installations they served. The Meyrargues dump closed on 5 September, and a new issue point opened the same day at Voreppe, ten miles northwest of Grenoble. The Aspremont dump closed the following day.

The next move was from Voreppe to Sellières, ten miles north of Lons-le-Saunier, on 12 September. The area was already too far behind the advancing Seventh Army installations, however, and a second forward dump was opened the next day at Baume-les-Dames, fifteen miles northeast of Besançon. With the change of direction following the shift to SHAEF command, the Baume dump moved to Vesoul on 19 September, where it was joined a day later by the group from Sellières. At Vesoul the dump was in a building for the first time, being housed in a large tobacco warehouse.

On 2 October the 1st Storage and Issue Platoon opened at Épinal, with the remainder of the company moving up gradually until 17 October, when the Vesoul dump was closed. On the same day a second dump was opened at Lunéville, some thirty miles north of Épinal. The Épinal and Lunéville dumps were in buildings large enough to accommodate mess and billets as well as the depot itself.

Throughout the early weeks of the campaign, transportation presented the greatest difficulty. While the army issue points were still close to the beaches, medical supplies were unloaded from the ships to Dukws, which ferried them ashore and delivered them directly to the dumps. As the army moved forward, medical supplies were brought up in organic vehicles of the 7th Medical Depot Company, operating around the clock. The pressure was relieved only after the

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[21] See p. 380, above.

[22] Principal sources for this section are: (1) After Action Rpt, Surg, Seventh Army, 15 Aug–31 Oct 44, an. 278; (2) Annual Rpt, Surg, Seventh Army, 1944; (3) Annual Rpt, 7th Med Depot Co, 1944; (4) Med Hist, 7th Med Depot Co, 25 Oct 44; (5) Unit rpts, 9th, 11th, 27th, 51st, 59th, 93d, 95th Evac Hosps, 1944; (6) Davidson, Med Supply in MTOUSA, 143–50.

TABLE 28—REQUISITIONS AND TONNAGE, 7TH MEDICAL DEPOT COMPANY AUGUST–NOVEMBER 1944

Month	Requisitions Processed	Tonnage Issued	Tonnage on Hand Last Day of Month
August	399	64.51	52.14
September	958	149.79	141.52
October	2,373	265.47	201.44
November	2,579	356.81	229.99

Source: Annual Rpt, 7th Med Depot Co, 1944.

Services of Supply organization was able to build up substantial stock levels in the rear areas and took over responsibility for delivering supplies to Seventh Army depots. The evacuation hospitals were similarly pressed for vehicles to carry their own supplies from the army issue points, which were sometimes as much as 150 miles away. Only the extra stocks carried by each Seventh Army hospital prevented critical shortages of some items.

Until the inauguration of rail transportation in late September, it was difficult to keep a sufficient volume of medical supplies in the army area. Many items were distributed on a ration basis through most of October, but there were no actual failures to meet minimum requirements. Local procurement was unnecessary to any important extent since quantities of captured German supplies were available. Housekeeping equipment, such as wood-burning stoves, pots and pans, knives, dishes, enamelware, electric refrigerators, and kerosene lamps generally came from this source. In emergencies, requisitions were filed with SOS NATOUSA in Naples by cable and supplies were sent by air.

Two portable optical units of the 7th Medical Depot Company averaged twenty-four pairs of spectacles and six repair jobs a day for army troops. Two dental prosthetic teams joined the depot company, one in late September and one in early October, serving variously with the 2d Convalescent Hospital, the 35th Field Artillery Group, and the parent unit.

During the months in which the 7th Medical Depot Company was supported by the Mediterranean Theater of Operations, monthly tonnage issued rose from 64.5 in August to 356.8 in November. (*Table 28*)

Medical Supply in the Communications Zone

The 231st Medical Composite Battalion—with its two attached medical base depot companies, the 70th with 2 officers and 29 enlisted men, and the 71st with one officer and 30 enlisted men—was activated in Oran on 15 August 1944, absorbing personnel and equipment of the 2d Medical Depot Company, and was assigned immediately to the DRAGOON operation.[23] The unit reached St.

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[23] See p. 345, above.

Raphaël on 9 September. The 71st Medical Base Depot Company took over operation of the Ste. Maxime depot, while the 70th accompanied the battalion to Marseille. A large garage and hangar had already been obtained by the Coastal Base Surgeon as a depot site. Eight operational medical units, each sufficient to maintain 10,000 men for 30 days, reached Marseille simultaneously with the supply personnel, and within 72 hours the depot was able to issue supplies.[24]

When the depot was in full operation, the 231st Medical Composite Battalion was sent to Dijon to set up a more forward base, the 71st Medical Base Depot Company moving to the Marseille depot on 24 September. It was at this time, however, that the decision to establish two base sections was made, and late in October the 231st returned to Marseille to resume operation of the Delta Base depot. The 70th and 71st Medical Base Depot Companies were assigned to CONAD, joining forces to operate the Dijon depot, which was sited in a French barracks. Italian service units and French civilians were used as needed by both base section depots.

Both Delta Base and Continental Advance were supplied by COMZ NATOUSA, but all supplies for CONAD passed through Delta Base. They were often transferred by Dukw from ships to freight cars bound for the forward area without ever entering a Delta Base dump. For about two months supplies were not received in Delta Base in large enough quantities to maintain adequate stock levels in either base section. Arrival times were uncertain, the condition of the only partially restored port of Marseille made unloading difficult, and transportation shortages frequently delayed movement of supplies from the docks to the depot. All together, the Delta Base supply organization was able to fill during October only about 60 percent of the requisitions from Seventh Army, 1st French Army, CONAD, and Delta Base. All base section medical units, however, carried 90-day supply levels with them to France and were not seriously handicapped by the slow buildup. The authorized stock level of 30 days of operating supplies and a 45-day reserve was reached in mid-November. Supplies adequate for 7 days of operation, with an 8-day reserve, were in the CONAD depot and the remainder in Delta Base warehouses.

As many items as possible were procured locally, including motor vehicles, which greatly facilitated the movement of supplies. Inducements were offered for the return of salvage and emphasis was placed on repair. After the return of the 231st Medical Composite Battalion to Delta Base, CONAD was without any medical maintenance and repair service of its own. Some repair work was farmed out to other military units, but many items had to be shipped to Marseille for repair.

The transfer of supply functions to the European theater was actively under discussion through October. The method

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[24] Principal sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944, an. K; (2) Rpt of Med Sec, Hq, COMZ NATOUSA; (3) Annual Rpt, Med Sec, Delta Base Sec, 1944; (4) Annual Rpt, Med Sec, CONAD, 1944; (5) Med Hist Data, 231st Med Composite Bn, 28 Oct 44; (6) Hist Journal, 231st Med Composite Bn, 13 Aug 44–31 Dec 45; (7) Annual Rpt, 7th Med Depot Co, 1944; (8) Davidson, Med Supply in MTOUSA, 150–56.

Table 29—Receipts and Issues, 231st Medical Composite Battalion
September–November 1944

Month	Tonnage		Percent of Issue			
	Received	Issued	Local	7th Army	French	CONAD
September	495	73	45	20	17	18
October	902	690	45	20	17	18
November	1,932	1,131	15	38	15	32

Source: Hist Journal, 231st Med Composite Bn, 13 Aug 44–31 Dec 45.

finally adopted was to transfer six officers and twenty-six enlisted men, all specialists in medical supply, from Headquarters, COMZ NATOUSA, to Headquarters, Southern Line of Communications. The effective date of the transfer was 20 November 1944.

The supply build-up in southern France is well shown by the record of receipts and issues of the 231st Medical Composite Battalion set forth in Table 29.

Professional Services in Southern France

Medicine and Surgery

In both medicine and surgery, the practices developed in earlier Mediterranean campaigns carried over to southern France. Medical officers and enlisted technicians who had gained their combat experience in North Africa, Sicily, and Italy supplied the continuity, while the theater consultants—Colonel Churchill in surgery and Colonel Long in medicine—gave the same attention to the medical service of Seventh Army, Delta Base, and CONAD that they gave to other armies and the base sections in the theater.

Forward Surgery—Field hospital platoons, operating within litter-carrying distance of the division clearing stations, continued to be the primary unit for forward surgery. In the Southern France Campaign, these units were set up to accommodate a maximum of 60 patients. The number actually cared for at any one time was usually between 25 and 40. Nontransportable patients went directly to these hospitals, where teams of the 2d Auxiliary Surgical Group performed such surgical procedures as were necessary to save life and limb and to put the patient in condition to be moved to an evacuation hospital farther to the rear. Cases going to the field hospitals usually included severe hemorrhage, wounds of the abdomen, severe chest wounds, multiple fractures, traumatic amputations, and those in immediate need of transfusion.

Other surgical cases went directly to the evacuation hospitals, as did those who had received initial treatment in the field units. The forward evacuations were organized and their tents laid out with the efficiency of the surgical service as the main consideration. In periods of heavy combat, evacuation hospital surgeons worked as teams in 12- and sometimes 16-hour shifts, with operating rooms continuously in use. The maximum holding period was seven days.[25]

The theater consultant, Colonel Churchill, spent three weeks visiting forward and base installations in southern France, beginning 16 September. He was followed in mid-October by the orthopedic consultant, Lt. Col. Oscar P. Hampton, Jr. The Seventh Army surgical consultant, Colonel Berry, was active in organizing and supervising the surgical work of army hospitals from the start of the campaign.[26]

In addition to adequate supplies of penicillin, which had largely replaced the sulfonamides, Seventh Army surgeons also had the advantage of daily deliveries of whole blood. From D plus 1 until D plus 8, blood was flown from the 15th Medical General Laboratory in Naples to Corsica and relayed to the invasion beaches by fast PT boats. Thereafter it was flown directly to the most forward airfield, where personnel of the 6703d Blood Transfusion Unit received and distributed it on a priority basis first to the field hospital units, then to the 400-bed evacuations, and finally to the 750-bed evacuations. The field hospitals averaged 3.5 to 4 units of whole blood per patient transfused, the evacuation hospitals 2 to 2.5 units. Blood also came by way of Naples from the French blood bank in Algiers.[27]

As the army moved forward and flight distances from Naples lengthened, forward hospitals drew blood locally wherever possible and maintained small blood banks of their own. In November a section of the 6707th Blood Transfusion Unit set up a blood bank in Marseille, where donors were available among service troops. Many civilians were also induced to give blood by the offer of flight rations to those who participated. A mobile section operated in the forward area, but the number of donors was too limited to be relied upon.[28]

Neuropsychiatry—The procedure for handling neuropsychiatric cases in Seventh Army was patterned on the increasingly successful system developed in Italy by Fifth Army under the guidance of the theater neuropsychiatric consultant, Colonel Hanson. Again continuity was provided by transfer of personnel, including the army consultant Major Ludwig, who had been commanding officer of the Fifth Army Neuropsychiatric Center.

Owing largely to the rapid initial advance of Seventh Army, with accompanying high morale among the combat troops, the incidence of psychiatric disorders was low during the first month of the campaign. Beginning in mid-September, however, as the terrain became more difficult, the weather deteriorated, and enemy resistance stiffened, an increasing number of neuropsychiatric casualties passed through the division clearing stations. The three divisions of VI Corps had been in almost continuous combat since the Salerno landings, and the impact of battle fatigue was cumulative.[29]

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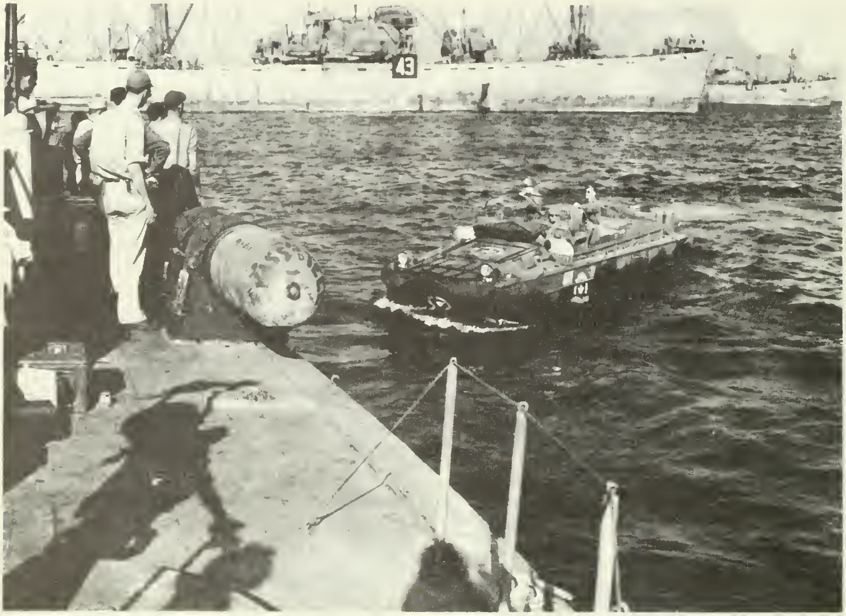
[25] (1) Annual Rpt, Surg, Seventh Army, 1944. (2) Annual Rpt, 2d Aux Surg Gp, 1944. (3) Annual Rpts, 1944, of 10th and 11th Field Hosps; and 9th, 11th, 27th, 51st, 59th, 93d and 95th Evac Hosps.

[26] Annual Rpt, Med Sec, MTOUSA, 1944, an. E.

[27] (1) Annual Rpt, Surg, Seventh Army, 1944. (2) Quarterly Rpt, 15th Med Gen Lab, 3d Quarter 1944.

[28] Annual Rpt, Delta Base, 1944.

[29] Principal sources for this section are: (1) After Action Rpt, Surg, Seventh Army, 15 Aug–31 Oct 44, an. 278; (2) Annual Rpt, Surg, Seventh Army, 1944; (3) Annual Rpt, 181st Med Bn, 1944; (4) Annual Rpt, 616th Med Clearing Co, 1944; (5) Annual Rpts, 1944, of hosps mentioned in the text.



LAST STAGES OF WHOLE BLOOD PIPELINE. *PT boat about to deliver whole blood to Dukw for transfer to invasion beach.*

The basic consideration was to treat neuropsychiatric casualties as far forward as possible. Cases were first examined by the division psychiatrists in the clearing stations, where every effort was made to get the men back into combat without delay. Those that did not respond promptly were sent to the Seventh Army Neuropsychiatric Center, operated by the 2d Platoon of the 616th Medical Clearing Company, 181st Medical Battalion. The center had a staff of eighty-five enlisted men, with four psychiatrists attached. The chief of the psychiatric service was Capt. (later Maj.) Stephen W. Ranson. All cases in which a psychiatric diagnosis was made at an evacuation hospital were also transferred to the center without further treatment.

At the center, treatment followed the pattern used in Fifth Army. Patients were kept under mild barbiturate sedation for twenty-four hours, but were maintained in ambulatory status. After the initial period of rest and quiet, they were interviewed and a course of therapy prescribed. Patients were kept active and were urged to interest themselves in the recreational and orientation facilities of the hospital.

Every effort was made to dispose of

Table 30—Venereal Disease Rates, Seventh Army, July–September 1944

Month	Total Cases	Rate per Thousand per Annum		
		White	Negro	Combined
July	1,291	130	222	133
August	876	87	210	95
September	707	62	142	66

Source: Annual Rpt, Surg, Seventh Army, 1944.

cases as quickly as possible. Except in special circumstances, four days was the maximum holding period. Those who could be returned to duty were then reequipped and sent back to their own divisions without passing through a replacement command. Those who needed further care went to a fixed hospital for more extensive treatment. Evacuation to Italy was necessary for a time, but among the fixed units transferred to southern France the 3d General Hospital at Aix-en-Provence was equipped to handle psychiatric cases, while the 51st Station, which opened on 4 November at Auxonne, was exclusively a neuropsychiatric installation.

Returns to duty from the division clearing stations were 50 percent of all neuropsychiatric cases treated for the period 15–31 August, 37 percent for the period 1–15 September, and 23 percent for the period 16–30 September. Returns to duty from the Seventh Army Neuropsychiatric Center and other Seventh Army hospitals for the same periods were 29 percent, 11 percent, and 12 percent, respectively.

Preventive Medicine

During the period that southern France was under Mediterranean theater control, there were few problems in preventive medicine. Most serious of these was venereal disease control. Malaria had been anticipated as a problem and prepared for, but proved to be minor. Trench foot was developing into a problem of major concern at the time operations passed to ETO.

Venereal Disease Control—The Seventh Army Venereal Disease Treatment Center, operated by the 616th Medical Clearing Company, 181st Medical Battalion, was initially overloaded with cases contracted in Italy during the staging period. The hospital, staffed by 8 officers and 93 enlisted men, had a planned capacity of 250, but had to expand almost immediately to 375 beds.[30]

Additional contacts were made in the coastal area, but as the army advanced northward through predominantly agricultural country, opportunities for sexual contacts lessened. The rapidity of movement also helped to reduce the venereal rate. (*Table 30*) In the main, the preventive measures taken under the direction of Major (later Lt. Col.) James E. Flinn, Seventh Army venereal disease control officer, were effective. These included an intensive educational program in the individual units, with emphasis on the importance of immediate prophylaxis; rigid enforcement of off-limits restrictions on known brothels; and curfew hours that limited the time available for contacts. The rapidity of cures, under the new penicillin treatment, tended to discourage any deliberate exposure to escape hazardous duties. Acute gonorrhea cases were returned to duty from the Venereal Disease Center within twelve hours, and mild cases were treated on duty status.

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[30] Primary sources for this section are: (1) Annual Rpt, Surg, Seventh Army, 1944; (2) Annual Rpt, 181st Med Bn, 1944; (3) Ltr, Col Barnes, VD consultant, MTOUSA, to Surg, MTOUSA, 2 Nov 44. Sub: Venereal Disease Control Activities in Seventh Army, Continental Base and Delta Base Secs; (4) Annual Rpt, Med Sec, MTOUSA, 1944, an. J; (5) Annual Rpt, Med Sec, Delta Base, 1944; (6) Annual Rpt, Med Sec, CONAD, 1944.

In the base sections, particularly in Delta Base, the problem was more difficult. Two metropolitan prophylactic stations were established in Marseille, but more were needed. All of the 31 licensed houses of prostitution in that city were placed off-limits, but indications were that the women simply moved to rooms and to small hotels, where they were even harder to control. Five brothels in Dijon were also placed off-limits apparently with more effect. Dispensaries and fixed hospitals in CONAD saw relatively few venereal cases.

Malaria—A malaria problem in southern France had been anticipated during the planning of DRAGOON, and a malariologist, Maj. Arthur W. Hill, was attached to Seventh Army, together with the 132d Malaria Control Unit. While a considerable number of cases were treated in the early weeks of the campaign, they were virtually all contracted in Italian staging areas before sailing. Individual preventive and suppressive measures were continued until 11 October, but were then discontinued as of no further value, and Major Hill returned to the 2655th Malaria Control Detachment in Italy.[31]

The 132d MCU went to the Coastal Base Section in September, being replaced in Seventh Army by the 131st MCU from Corsica. In October the 132d went to CONAD and the 131st to Delta Base. Both passed to ETO in November. Neither of these units, however, engaged in actual malaria control work. Inspection of the Marseille area immediately after occupation of the city revealed no malaria-infested mosquitoes, and none were found in the advance north. The malaria control units, under both army and base section jurisdiction, were used primarily for fly, roach, and bedbug control, and for general sanitation work.

Trench Foot—Trench foot appeared among Seventh Army troops toward the end of September, becoming an increasingly severe problem through the succeeding months, but that story belongs rather to the ETO than to the MTO period. The major contributing factor was the same as it had been in Italy—cold and wet weather in which men at the front had no opportunity to change socks or dry their feet for days at a time. Wool socks and shoe pacs were issued, but only after the condition had appeared. Even had they been available at the start of the bad weather, however, they would have had only a minimal preventive effect, since the nature of the action required that men stay in the lines for considerable periods of time.[32]

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[31] Principal sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944, an. J; (2) Annual Rpt, Surg, Seventh Army, 1944; (3) Annual Rpt, Med Sec, CONAD, 1944; (4) Annual Rpt, 9th Evac Hosp, 1944.

Dental Service

During the staging period before leaving Italy, Seventh Army dental officers, under the direction of Colonel Gurley, Seventh Army dental surgeon, made every effort to bring the dental health of the assault troops to a high level. Except for emergencies, little dental work was possible during the early weeks of the invasion. Ninety percent of the division dental officers did none at all until D plus 15, functioning during that period in various medical and administrative capacities. The dental services of the evacuation hospitals and of the combat divisions were supplemented around the beginning of October by two dental prosthetic teams assigned to the 7th Medical Depot Company and a third assigned to serve U.S. troops operating with 1st French Army.[33]

Inspection of the combat dental service of Seventh Army early in October by the theater dental surgeon, Colonel Tingay, revealed no dental problems. Colonel Tingay was particularly impressed by the manner in which the dental work of the 3d Division was being carried on. He reported:

> One officer from each infantry regiment, the officer assigned to special troops and one officer from the medical battalion have been attached to the division surgeon's office and thus come under the direct control of the Division Dental Surgeon. With this nucleus of five officers, clinics are established in rearward areas in the most feasible locations and a large volume of work accomplished during actual combat. The other dental officer of each infantry regiment is left with the regiment and the officer assigned to artillery is left with the division artillery. In addition to providing emergency treatment these officers are also able to accomplish some constructive dentistry. A prosthetic laboratory truck has been constructed and is placed in operation wherever the rearward clinic is established.[34]

In the base sections dental work was performed by dental personnel of the fixed hospitals.

Veterinary Service

The first veterinary unit to arrive in southern France was the 890th Medical Service Detachment (formerly T Detachment), which had been active in the theater since North African days. The unit landed on the invasion coast on D plus 8—23 August—and began supervising the issue of field rations at quartermaster Class I supply dumps in the beach area. Throughout the period of MTO control, the detachment worked in close co-operation with the Seventh Army quartermaster section, supervising the issue of rations at army railheads.[35]

The 45th Veterinary Company (Separate) arrived on schedule on D plus 20 (4 September). The veterinary detachments, consisting of 3 officers and 12 enlisted men each, of the 601st and 602d Field Artillery Battalions arrived about the same time, together with 1,200 animals of the 2 units. The 601st had come in by glider as a component of the 1st Airborne Task Force, and was then fighting in the Maritime Alps, where it was joined by the 602d, its animals and its veterinary personnel. The animals were shipped from Italy on LST's whose holds had been converted to stall space by the use of earth and sandbags. The 2d Platoon of the 45th Veterinary Company was assigned to support the two field artillery battalions, while the balance of the company went to Lons-le-Saunier for staging.

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[32] (1) Annual Rpt, Surg, Seventh Army, 1944. (2) Annual Rpt, Surg, VI Corps, 1944. (3) Annual Rpt, Surg, 3d Inf Div, 1944.

[33] (1) Annual Rpt, Surg, Seventh Army, 1944. (2) Annual Rpt 7th Med Depot Co, 1944.

[34] Rpt of Inspection by Col Tingay, 9 Oct 44.

[35] Principal sources for this section are: (1) Annual Rpt, Surg, Seventh Army, 1944; (2) Annual Rpt, 17th Vet Evac Hosp, 1944; (3) Annual Rpt, 45th Vet Co (Separate), 1944; (4) Annual Rpt, Med Sec, CONAD, 1944.

The Seventh Army veterinary surgeon, Colonel Stevenson, arrived in southern France on D plus 25, or 9 September, along with the 17th Veterinary Evacuation Hospital, of which he had been commanding officer. The hospital staged for a few days at St. Raphaël, then opened on 18 September in a French artillery barracks at Grenoble. Three days later the 45th Veterinary Company, less its 2d Platoon, moved to Sisteron, some 75 miles south of Grenoble. The unit moved once more, to Gap, on 29 September.

On 24 September both the 17th Veterinary Evacuation Hospital and the 45th Veterinary Company were attached for operational control to First French Army, which had 6,000 animals in the Maritime Alps between Nice and the Swiss border and another 6,000 in the Vosges area. From the Vosges, French animal casualties went to Grenoble by animal hospital train. Though its Table of Organization stall capacity was only 150, the 17th Veterinary Evacuation Hospital operated up to 236 stalls.

In the base sections, as distinct from the army area, the veterinary service was confined primarily to inspection of cold storage plants for perishable foods and continuous inspection of locally processed foodstuffs.

CHAPTER XI

The Northern Apennines

By the middle of August 1944, when the lightning thrust into southern France was being launched, the Allied armies in Italy were halted on the south bank of the Arno River and along the Metauro on the Adriatic. The U.S. Fifth and British Eighth Armies had outrun their supplies; troops were exhausted after three months of continuous fighting; and the effective strength of Fifth Army had been more than halved to build the military power that would enable Lt. Gen. Alexander M. Patch to sweep from the Riviera beaches to the Moselle River in a month's time. Yet the strongest German positions in Italy still lay ahead, blocking access to the rich Po Valley, whose agricultural and industrial products continued to feed the German war machine despite repeated sorties by Allied bombers.

Preparations for the Offensive

Allied Armies at the Arno Line

The Military Situation—When General Alexander halted the Allied Armies for rest and regrouping at the Arno line, Eighth Army, with sixteen divisions, held four-fifths of the front, from the junction of the Elsa and Arno Rivers about twenty miles west of Florence to the Adriatic coast at the mouth of the Metauro River. Fifth Army, with a total of five divisions, held the sector running west from the Elsa along the south bank of the Arno to the Ligurian Sea about ten miles north of Leghorn.[1]

In the Fifth Army area, IV Corps, commanded by General Crittenberger, held about thirty miles of the river line from the mouth of the Arno east to the village of Capanne. Task Force 45, composed of the 45th Antiaircraft Artillery Brigade and attached troops, was on the left, or seaward flank; the 1st Armored Division, reorganized and reduced to about two-thirds of its former strength, was on the right. The 34th Division and the 442d Regimental Combat Team were in army reserve in rest areas south of Leghorn. The 5-mile front from Capanne to the Eighth Army boundary was held by II Corps, commanded by General Keyes, with only one RCT of the 91st Division in the line. The 85th and 88th Divisions were in corps reserve, in bivouac north of Volterra.

Until the port of Leghorn could be restored, Fifth Army supplies had to be unloaded at Civitavecchia or Piombino and trucked up to 150 miles over battle-damaged highways. The supply situation would be difficult, even after reconstruction of port facilities in Leghorn, as long as the enemy held the Arno plain and remained within artillery range of the only good lateral road south of the river, Highway 67. The enemy, on the other hand, controlled an excellent road network for the movement of troops and supplies in the Po Valley, behind his strongly fortified Gothic Line.

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[1] Principal sources for this section are: (1) *Fifth Army History*, pt. VII, *The Gothic Line* (Washington [1947]); (2) Opns Rpt, II Corps, Aug 44; (3) Opns Rpt, IV Corps, Aug 44; (4) Clark, *Calculated Risk*, pp. 389–94.

The northern Apennines form a rugged mountain barrier about 50 miles wide, extending northwest from the Adriatic Sea across the peninsula, and studded with peaks of 3,000 feet to well above 6,000 feet. The northern slopes are relatively easy grades, but the southern slopes, which then faced the Allied armies, are steep and difficult. The Gothic Line, begun as early as the winter of 1943–44 when Fifth Army was stalled before Cassino, lay generally just south of the watershed dividing the streams flowing south to the Arno from those flowing north to the Po. The line was anchored on the Ligurian Sea in the vicinity of Massa where the coastal plain was only 2 or 3 miles wide, and extended roughly 170 miles southeast to Pesaro on the Adriatic.

Highways across the mountains were few and tortuous, the best of them being Highway 65, the most direct route from Florence to Bologna, a distance of about seventy miles. Though there were many sharp curves, the road was paved and the grades were less steep than those on Highway 64, a few miles farther west. Highways 6524 and 6521, somewhat east of 65, were secondary roads, often narrow and always steep and winding. The relative scarcity of roads made it possible for the Germans to concentrate their defenses, the strongpoints being astride the highways and connected by a series of dug-in gun emplacements, log and concrete bunkers, and fortified trenches.

General Martin Receiving OBE *from General Alexander, making Martin an honorary knight commander in that order.*

The weakest point, topographically, in the Gothic Line was Futa Pass, where Highway 65 crossed the divide at an elevation of only 2,962 feet. The strongest fortifications were at this point, running southeast to Il Giogo Pass on Highway 6524.

Fifth Army Medical Support—Medical facilities had been stripped down even more than the army as a whole by the demands of the campaign in southern France. At the army level, General Martin, Fifth Army surgeon, had at his disposal two medical battalions, the 161st and 162d; the 32d and 33d Field Hospitals; 2 400-bed evacuation hospitals, the 15th and 94th; 4 750-bed evacuation hospitals, the 8th, 16th, 38th, and 56th; the 3d Convalescent Hospital; the 2d Auxiliary Surgical Group, with 14 teams on temporary duty from general hospitals in the theater only partially replacing the twenty-eight teams withdrawn for service with Seventh Army; the 2d Medical Laboratory; the 12th Medical Depot Company; and miscellaneous minor units. Even to support the divisions composing Fifth Army as of 16 August 1944, these medical units were inadequate, particularly so in 400-bed evacuation hospitals, which had previously been assigned in the ratio of at least one to each combat division. Task Force 45, moreover, had no organic medical support other than the medical detachments of its component units; the 92d Division and the Brazilian Expeditionary Force, both on the way to the combat zone, were without hospitals.[2]

At the corps and division levels, medical support remained substantially as it had been in earlier Fifth Army campaigns. Each of the two corps had a medical battalion assigned, the 54th to II Corps and the 163d to IV Corps; and each combat division had its own organic medical battalion. The Brazilian medical organization at the division level was substantially the same as the American.

The 109th Medical Battalion, organic to the 34th Division, received an unexpected but welcome visitor on 13 August when Capt. Francis Gallo of Company C walked into battalion headquarters. Captain Gallo had been captured in the Kasserine breakthrough of February 1943. He had escaped after more than seven months in German prison camps, and for almost a year had been serving with a band of Italian partisans in the Florence area.

As of 16 August, divisional and corps medical units were with their respective combat elements, taking advantage of the lull to rest personnel and re-equip. Fifth Army hospitals were disposed in a roughly quadrangular area whose corners were Cecina and Leghorn on the coast and Volterra and Peccioli about twenty miles inland. All were in operation except the 16th Evacuation Hospital, which had closed at Ardenza just south of Leghorn on 12 August but had not yet moved elsewhere.

Mounting the Attack

Planning and Regrouping—Plans developed during July called for an early resumption of the offensive, with Fifth Army launching the main attack on the Gothic Line by way of Highway 65. The strength of the enemy positions in the Futa Pass area, however, led General Alexander to shift the main attack to the Eighth Army front, where a flanking movement along the Adriatic offered promise of quicker results. It was anticipated that Generalfeldmarschall Albert Kesselring would have to concentrate the bulk of his forces against Eighth Army. Fifth Army would then attack along the axis of Highway 6524 toward Il Giogo Pass. The success of the operation depended on co-ordination and timing.

By way of preparation, the boundary between Fifth and Eighth Armies was redrawn twenty miles east of Florence, and 13 Corps, which had held Eighth

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[2] Sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1944; (2) Annual Rpt, Surg, II Corps, 1944; (3) Annual Rpt, Surg, IV Corps, 1944; (4) Unit rpts of med units mentioned in the text. The Brazilian Expeditionary Force brought its own medical officers, nurses, and enlisted technicians, who were attached to U.S. hospitals. See pp. 439, 440–41, below.

Army's left flank, was transferred to Fifth Army. The 13 Corps left boundary was shifted east to pass through Florence, and II Corps, which was to spearhead the Fifth Army attack, was concentrated along a 5-mile front west of the city. IV Corps, which was to perform a holding function, occupied the remainder of the Fifth Army front extending some forty miles from the II Corps boundary to the sea.

Regrouping for the assault brought the 34th Division and the 442d Regimental Combat Team (less its 100th Battalion)[3] under II Corps control, along with the 85th, 88th, and 91st Divisions. IV Corps retained Task Force 45 and the 1st Armored, and was given the 6th South African Armoured Division from 13 Corps. The all-Negro 92d Division and the Brazilian Expeditionary Force of somewhat more than division strength were also assigned to IV Corps, but only the 370th Combat Team of the 92d reached the corps area in time for the attack. The first Brazilian increment, the 6th RCT of the 1st Brazilian Division, went into the line on 15 September.

Preliminary Maneuvering—Eighth Army jumped off on 25 August, and by 6 September, when heavy rains interrupted the advance, had broken through the Adriatic anchor of the Gothic Line to a position only six miles south of Rimini where Highway 9, the best lateral road north of the mountains, reached the coast. The enemy had committed all his reserves and had shifted three of his best divisions from the Fifth Army front to meet General McCreery's challenge.

As early as 31 August there was evidence that the Germans all along the Fifth Army front were pulling back to the prepared positions of the Gothic Line. IV Corps sent reinforced patrols across the Arno the night of 31 August—1 September, and followed up in force during the morning. By the end of 2 September, the bulk of IV Corps was north of the river, and the two major hill masses commanding the Arno plain, Mts. Pisano and Albano, were in Allied hands. Over the next ten days IV Corps pushed across the plain and into the lower slopes of the Apennines, securing the Autostrada—the excellent road connecting Highway 1 north of Pisa with Florence—and liberating the cities of Lucca, Montecatini, Pistoia, and Prato.

On the right flank, 13 Corps had already secured a bridgehead north of the Arno from Florence east to Pontesieve during the last week of August. On 1 September II Corps crossed the river, and both II Corps and 13 Corps moved forward to assembly areas. Originally scheduled for 6 September, D-day for the Fifth Army assault on the Gothic Line was postponed until the 10th to take advantage of further enemy withdrawals. When the attack was finally launched, the Fifth Army front was ten miles north of the Arno, and by 12 September leading elements of both II and 13 Corps were probing the outer defenses of the Gothic Line.

Medical Preparations—Organic and corps medical battalions moved forward with the combat elements they supported. Medical troops had been rested, and most had received additional training in the handling of casualties in mountainous terrain. To preserve secrecy, however, the hospitals were not moved up before the attack was launched, but were infiltrated into new areas. The 16th Evacuation Hospital was established at San Casciano about 10 miles south of Florence, on 26 August, followed four days later by the neuropsychiatric center. On 1 September the 8th Evacuation moved into the same area. The 94th Evacuation moved to Castelfiorentini, some 20 miles southwest of Florence, on 17 August, and on 9 September advanced to Pratolino on Highway 65 about 6 miles north of the city. The 15th Evacuation Hospital set up in Florence itself on 10 September, followed by the venereal disease center on the 13th. On 15 September the 38th Evacuation opened near Pisa to serve units on the IV Corps left flank.[4]

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[3] The 442d Regiment, including the 100th Battalion from Task Force 45, was withdrawn the first week in September for shipment to France.

Combat Operations

Breaching the Gothic Line

On 12 September the 34th Division was in contact with the main defenses of the Gothic Line to the left of Highway 65. The 91st Division was astride Highway 6524, which branched off to the right from Highway 65 about twelve miles north of Florence. To the right of the 91st, the 1st British Division of 13 Corps was abreast of the two U.S. divisions. Elements of the 91st were at the base of Mt. Altuzzo, which overlooked Il Giogo Pass from the right, while other 91st Division units were approaching Mt. Monticelli, the left bastion of the pass.[5]

On 13 September the 91st Division sideslipped to the left of Highway 6524 while the 85th Division moved in between that road and the British sector on the right. After four days of hard fighting, the 85th secured Mt. Altuzzo on 17 September while the 91st was storming Mt. Monticelli. By the end of the day, 18 September, Il Giogo Pass had been outflanked from both sides, and II Corps had broken through the Gothic Line on a 7-mile front.

The strategically placed town of Firenzuola fell to the 85th Division on 21 September. There the road turned sharply left to rejoin Highway 65, while another secondary road, Highway 6528, branched off along the Santerno River northeast to Imola, where it intersected Highway 9 on the edge of the Po Valley.

The 34th Division, meanwhile, had exerted constant pressure in the area between Highway 65 and the IV Corps zone to keep the enemy from shifting forces to the Il Giogo battle. On 21 Sep-

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[4] (1) Annual Rpt, Surg, Fifth Army, 1944. (2) Periodic rpts of med units mentioned in the text.

[5] Principal sources for this section are: (1) *Fifth Army History*, pt. VII; (2) Opns Rpt, II Corps, Sep 44; (3) Opns Rpt, IV Corps, Sep 44; (4) Field Marshal the Viscount Alexander of Tunis, "The Allied Armies in Italy from 3rd September, 1943, to 12th December, 1944," Supplement to the *London Gazette*, 6 June 1950, pp. 2940–60; (5) Clark, *Calculated Risk*, pp. 394–403; (6) Kesselring, *Soldier's Record*, pp. 254–64; (7) Howe, *1st Armored Division*, pp. 369–86; (8) Schultz, *85th Division*, pp. 109–84; (9) Delaney, *Blue Devils*, pp. 126–62; (10) Robbins, *91st Division*, pp. 92–194; (11) Maj. Paul Goodman, *A Fragment of Victory in Italy During World War II, 1942–1945* (Carlisle Barracks, Pa.: Army War College, 1952), pp. 25–56; (12) Sidney T. Mathews, "Breakthrough at Monte Altuzzo," *Three Battles: Arnaville Altuzzo, and Schmidt*, UNITED STATES ARMY IN WORLD WAR II (Washington, 1952); (13) Starr, ed., *From Salerno to the Alps*, pp. 301–64.

Collecting Point at Partially Demolished House on Mt. Altuzzo

tember the 34th also broke through the Gothic Line to the west of Futa Pass, which now became untenable for the Germans. Though the strongest point of the Gothic Line, Futa Pass fell on 22 September to a single battalion of the 91st Division.

On the right flank of Fifth Army, 13 Corps followed Highway 6521 toward Faenza, and Highway 67, which swings north beyond Florence in the direction of Forli and Ravenna. Leading elements of the corps had passed through the Gothic Line along both axes of advance by 21 September. Even on the left flank, where IV Corps was thinly spread to hold rather than to advance, the German line had been penetrated at several points.

In less than two weeks, Fifth Army had broken through the strong defensive positions of the Gothic Line on a 30-mile front from Vernio on Highway 6520 to San Godenzo Pass on Highway 67. With several alternatives now available to him, General Clark sent II Corps down the Santerno Valley toward Imola, while 13 Corps struck in the direction of Faenza. These were the shortest routes to the Po Valley and promised the greatest help to Eighth Army, which was bogged down in rain and mud in the vicinity of Rimini.

For the new attack, the 88th Division was brought up, passing through the 85th along Highway 6528, while the 91st and 34th continued to press forward in their own sectors to cover the 88th. The Santerno Valley proved impregnable. The 88th Division seized and held commanding heights, including Mt. Pratolungo on the left of the river and Mts. Battaglia and Capello on the right, but failed to advance further in the face of mounting opposition. Between 21 September and 3 October, when the Santerno Valley drive was halted, the 88th had 2,105 casualties—almost as many as the whole of II Corps had suffered in breaching the Gothic Line.

As the Santerno Valley attack stalled on the rugged, fogbound slopes of Mt. Battaglia, the emphasis shifted to Highway 65, where the 34th, 91st, and 88th Divisions converged on Radicosa Pass, about three miles north of the point where Highway 6524 reunited with the main route and some ten miles beyond Futa Pass. In the face of the threat posed by the 88th Division in the Santerno Valley, the Germans abandoned Radicosa Pass on 28 September.

By the end of the month, three weeks after the beginning of the campaign, all three corps of Fifth Army were on the northern slopes of the Apennines, an average of ten miles beyond the Gothic Line, but the fall rains had begun, hampering the advance and making supply lines increasingly difficult to maintain. The troops were weary from continuous and bitter mountain fighting, and certain classes of ammunition were running low.

Halt Before Bologna

Following his withdrawal from Radicosa Pass, the enemy fell back to the first of four natural defense lines still blocking Fifth Army's approach to the Po Valley. This first line crossed Highway 65 in the vicinity of Monghidoro; the second line, about 4 miles beyond the first, passed through Loiano; the third and most formidable line had its strongpoint at the Livergnano Gap, 4 miles beyond Loiano; and the last defensible enemy position in the mountains was 3 miles beyond the gap, on a line crossing Highway 65 just south of Pianoro.[6]

The II Corps drive was launched in the early morning of 1 October from Radicosa Pass, just 24 miles from Bologna. The 34th Division was on the left, the 91st astride Highway 65, and the 85th was to the right of the highway, following the valley of the Idice River, while the 88th, on the extreme right, was still in the Santerno Valley. In order to strengthen General Keyes' position as much as possible, the 6th South African Armoured Division, which held the sector between the 34th Division and Highway 64, was withdrawn from IV Corps and placed under direct army control, while 13 Corps began the relief of the 88th Division preparatory to a narrowing of the II Corp front. Combat Command B of the 1st Armored Division was attached to the 6th South African Armoured Division and the remainder of the division went to II Corps as a mobile reserve to exploit any breakthrough onto the plain.

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[6] Principal sources for this section include those cited at the beginning of the previous section, with the addition of: (1) Opns Rpt, II Corps, Oct 44; and (2) Opns Rpt, IV Corps, Oct 44.

Despite cold weather, driving rain, and fog that set in the second day of the attack, the Monghidoro line was overrun along a 16-mile front by 4 October, and the Loiano line by the 9th. But rain, fog, mud, and fatigue were taking their toll, and resistance was stiffening as the enemy concentrated his forces to meet the threat to Bologna, his major supply and communications center.

For the next phase of the drive the front was still further narrowed, the 34th Division moving over to the right of Highway 65, between the 91st and 85th, and the 88th Division sideslipping to its own left into the Sillaro Valley, as the British 78th took over the Santerno Valley sector. Again the objective was attained, the Livergnano line being overrun by 15 October, but again the pace was slowed, and losses were heavy and cumulative.

For the 6-day period 10–15 October, II Corps lost 2,491 battle casualties. The total since the start of the Bologna drive on 1 October was 5,699, and since the beginning of the offensive on 10 September, 12,210, or nearly a full division. The loss of an actual division would have been less severely felt, because losses were disproportionately high among junior officers. Returns to duty made up only a fraction of the losses. Replacements were not available in sufficient numbers, and were inexperienced at best. Battlefield commissions given to enlisted men made up some of the officer losses, but seasoned noncommissioned officers were in equally short supply. To personnel shortages had to be added general fatigue, muddy and mountainous terrain that hampered the movement of supplies and restricted the mobility of artillery, and weather that prevented effective air support. A massive bombing of enemy supply dumps in the Bologna area was the only significant air activity in the period.

For another week II Corps struggled forward against increasingly strong opposition, but it was a losing gamble. With Eighth Army immobilized by soft ground and flooded streams on the fringe of the Po plain, II Corps now faced the best German units in Italy. Machine guns and mortars were hand-carried up mountain trails. Rations and ammunition were brought up by mule pack, but even mules could not move the heavy guns through the mud. The 91st Division tried oxen, but with no better success. After 17 October, when the 697th and 698th Field Artillery Battalions were withdrawn for shipment to France, there were no heavy guns to move, and by the last week of October ammunition was in such short supply as to require drastic restrictions on its use.

The last straw was added on 26 October when torrential rains washed out roads and bridges. In rare intervals of clear weather, the Po Valley was visible in the distance, but Bologna was still nine heartbreaking miles away. General Keyes ordered II Corps to fall back to defensible positions and dig in.

On the IV Corps front, activity came to a halt at the same time. Although the corps had been stripped to hardly more than the strength of a reinforced division, some advances had been made. Task Force 92, consisting of the 370th RCT and antiaircraft units detached from Task Force 45, had advanced up the coast a few miles beyond the resort city of Viareggio, while the Brazilian 6th Combat Team had moved so far into the Serchio Valley in the center of the

IV Corps zone that the advance was stopped by General Crittenberger lest it invite counterattack, for which no reserves were available.

Winter Stalemate

After stabilization of the front late in October, action in all sectors was largely limited to patrols and reconnaissance. Elements of the 92d Division, brought under direct army control early in November, made minor gains along the coast north of Viareggio. On 24 November, units of Task Force 45 captured Mt. Belvedere, about 5 miles west of Highway 64 above Poretta, but were able to hold the mountain only five days before it was regained by the enemy. Similarly, Mt. Castellaro in the 13 Corps zone 7 or 8 miles northeast of Livergnano, was retaken by the Germans before the end of the month. For the most part, forward positions were held by reduced forces while troops were rotated back to a rest area near Montecatini for ten days at a time. The men were also given passes to Florence and even to Rome.[7]

On 16 December command of Fifth Army passed to Lt. Gen. Lucian K. Truscott, Jr., former VI Corps commander. General Clark succeeded Field Marshal Sir Harold R. L. G. Alexander as commander of the Allied armies in Italy, to be known thereafter by the earlier designation of 15th Army Group. Alexander moved up to supreme command of the theater in place of General Sir Henry Maitland Wilson, who became representative of the British Chiefs of Staff in Washington. Alexander's deputy and commander of the U.S. theater was Lt. Gen. Joseph T. McNarney, who had succeeded Devers in late October. Toward the end of March 1945 General Eaker was recalled to Washington to become Chief of the Air Staff. He was succeeded as Mediterranean Allied Air Force commander by Lt. Gen. John K. Cannon of the Twelfth Air Force.

When Clark assumed command of the army group, the Allied front in Italy extended on an irregular line from a point on the Adriatic six miles northeast of Ravenna to the Ligurian coast three miles south of Massa. Eighth and Fifth Armies were in contact southwest of Faenza.

Early in January the new command decided to postpone further large-scale operations until spring, when it was anticipated that some reinforcements would be available, adequate supply levels would have been attained, and the weather would be favorable for rapid exploitation by armor and motorized infantry once the Po Valley was reached.

Reinforcements were already on the

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[7] Principal sources for this section are: (1) *Fifth Army History*, pt. VII and VIII, *The Second Winter* (Washington [1947]); (2) Opns Rpts, II Corps, Nov 44–Mar 45; (3) Opns Rpts, IV Corps, Nov 44–Mar 45; (4) The Allied Forces, Mediterranean Theater, *Report by the Supreme Allied Commander, Mediterranean, Field Marshal the Viscount Alexander of Tunis, to the Combined Chiefs of Staff on the Italian Campaign, 12 December 1944 to 2 May 1945* (London: His Majesty's Stationery Office, (1951) (hereafter cited as Alexander, *The Italian Campaign*), pp. 5–32; (5) Truscott, *Command Missions*, pp. 447–70; (6) Clark, *Calculated Risk*, pp. 404–25; (7) Kesselring, *Soldier's Record*, pp. 264–67; (8) Howe, *1st Armored Division*, pp. 386–96; (9) Schultz, *85th Division*, pp. 185–96; (10) Delaney, *Blue Devils*, pp. 164–84; (11) Robbins, *91st Infantry Division*, pp. 195–261; (12) Goodman, *Fragment of Victory*, pp. 56–119; (13) Theodore Lockwood, ed., *Mountaineers* (Denver, no date), pp. 6–23; (14) Starr, ed., *Salerno to the Alps*, pp. 365–85.

way. The 365th and 371st Regimental Combat Teams of the 92d Division and the 1st and 11th RCT's of the 1st Brazilian Division arrived in the combat zone in October and, after intensive training, were ready for action in November. Another combat team—the 366th, made up of men from other branches converted to infantry—was assigned to Fifth Army in November and attached to the 92d Division. A newly arrived light tank battalion, the 758th, and the 1125th Armored Field Artillery Battalion formed from inactivated antiaircraft units, were also attached to the 92d, while II Corps received a battery of British heavy guns. In addition to these organized units, Fifth Army received 5,000 individual replacements in November, but was still 7,000 men below Table of Organization strength.

In January more antiaircraft units, including most of those operating under Task Force 45, were reorganized as the 473d Infantry regiment. Also in January, the most important of all Fifth Army's reinforcements arrived when the 10th Mountain Division, a highly trained outfit of picked men, reached the combat zone. These increments made it possible to return 13 Corps to Eighth Army, with a corresponding realignment of the army boundaries, although the 6th South African Armoured and the 8th Indian Divisions remained with Fifth Army.

No reinforcements were received in February, and late in March the 366th Infantry, which had not worked out well as a combat unit, was disbanded, its personnel being converted to service troops. The loss was more than balanced, however, by the return of the 442d Regimental Combat Team from France, where it had served with Seventh Army since the end of September and had again demonstrated its outstanding fighting qualities. The Italian Legnano Group, with a strength of about two-thirds of a division, was also attached to Fifth Army in March.

Shifts of units between corps, and rotation in the line, were motivated primarily by the need to rest veteran troops and to give some experience to new ones. Training was a continuous process at all levels, including an officer candidate school set up in February. Meanwhile supplies of ammunition were building up; trucks, tanks, and other vehicles were being repaired; worn-out equipment was being replaced. At the staff level, plans for the spring offensive were being drawn.

With snow blanketing the peaks and filling the mountain passes, little action of any kind was possible during the winter months, although vigorous patrolling continued along the entire front. In the 13 Corps zone an attempt to seize the key town of Tossignano on the Imola road early in December was repulsed with heavy losses. Late in the same month, an indicated build-up of enemy strength in the thinly held IV Corps sector led to an attack by the 92d Division in the Serchio Valley, but the Germans, already on the move, quickly seized the initiative and gained considerable ground before the 8th Indian Division could move up from army reserve to re-establish the original line.

Early in February the 92d undertook another limited offensive to improve its positions on the left flank, but with little success. The 365th and 366th RCT's secured their objective, the commanding ridge of Mt. della Stella in the

Serchio Valley, on 5 February, but could not hold the position against counterattacks in force over the next several days. The 370th and 371st RCT's, seeking to advance to Massa along the narrow coastal plain, ran into dense mine fields and fierce resistance that forced them back to their original positions with heavy losses in both men and tanks after three days of fighting. In the II Corps area, an attempt to improve their positions by elements of the 34th Division was similarly thrown back with heavy losses.

Only in the area to the left of Highway 64, which figured prominently in General Truscott's plans for the spring offensive, was any substantial success gained. There the 10th Mountain Division and the 1st Brazilian Division, in brilliant maneuvering over terrain as rugged as any in the Apennines, retook the long-disputed Mt. Belvedere and a dozen peaks beyond it, giving Fifth Army both excellent observation into the Po Valley and good positions from which to launch further drives, at the same time securing a 10-mile stretch of Highway 64 from the threat of enemy shelling. These actions, which were carried out between 18 February and 9 March, won for the 10th Mountain Division the spearhead role in the forthcoming Po Valley Campaign.

Medical Support in the Field

The conditions under which the Fifth Army medical service operated in the northern Apennines were very similar to those experienced in the fall and winter of 1943 in the Cassino area, save only that the northern mountains were higher and the weather worse. During the Gothic Line battles and the push toward Bologna, the nature of the terrain reduced much of the fighting to a series of small unit actions involving no more than a battalion and often less. To care for casualties in such engagements, the medical service, too, had to function in small units, with numerous forward aid stations and long litter hauls. The period of stalemate was an unending battle against cold and dampness waged by small detachments of medical troops close to the outposts, with long evacuation lines to hospitals withdrawn to winter positions. In short, Fifth Army's second winter in Italy was a repetition of the first.

Period of Active Combat

Medical Support of II Corps—The tasks imposed on the medical battalions and field hospitals supporting II Corps in the Gothic Line battles and the subsequent drive toward the Po Valley were the most difficult of the Italian campaign. The main highways were heavily traveled, often under artillery fire, and always at a distance from the actual fighting. Secondary roads were few, narrow, heavily mined, and by October deep in mud. Bypasses built by II Corps engineers were generally open only to one-way traffic, imposing dangerous delays on ambulances.[8]

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[8] Principal sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944; (2) Annual Rpt, Surg, Fifth Army, 1944; (3) Annual Rpt, Surg, II Corps, 1944; (4) Annual Rpts, Surgs, 34th, 85th, 88th, 91st Divs, 1944; (5) Annual Rpt, 54th Med Bn, 1944; (6) Monthly Rpts, 109th Med Bn, Sep, Oct, 44; (7) Monthly Rpts, 310th Med Bn, Sep, Oct 44; (8) Monthly Rpts, 313th Med Bn, Sep, Oct 44; (9) Weekly Rpts, 316th Med Bn, Sep 44; 316th Med Bn Hist. (10) Annual Rpts, 32d, 33d Field Hosps, 1944.

Division clearing stations with their attached field hospital units were necessarily restricted to sites accessible to the main highways. As the rainy season advanced, suitable locations were increasingly difficult to find, making close support impossible and forcing additional burdens on the collecting companies. Jeeps were used to evacuate battalion aid stations wherever possible, but even these versatile vehicles could not negotiate many of the mountain trails, leaving long and hazardous litter carries the only alternative. In some sectors, supplies and equipment were brought up by mule; in others hand-carrying was necessary.

The assault on the Gothic Line was launched initially by the 34th and 91st Divisions along the axis of Highway 65. The clearing station of the 109th Medical Battalion, organic to the 34th, moved up from the assembly area on 12 September to a site left of Highway 65, about 5 miles northwest of the point at which Highway 6524 branches off toward Scarperia and Firenzuola. There it was joined by a platoon of the 33d Field Hospital, both units remaining in place until after the Gothic Line had been breached. The station admitted 244 patients on 17 September, its largest single day's total for the campaign. The clearing station moved forward on 27 September to a site on Highway 65, about 3 miles south of Futa Pass, where it remained until early October. During this period, collecting companies of the battalion operated up to 10 miles beyond the clearing station.

The clearing station of the 316th Medical Battalion, organic to the 91st Division, remained in the assembly area until 15 September, when it advanced to a point east of Highway 65 about three miles north of the road junction. The site was easily accessible but was surrounded by heavy guns, which invited counterbattery fire and led the unit historian to describe it as an ambulance driver's dream but a psychiatrist's nightmare. The supporting platoon of the 33d Field Hospital was established in a somewhat safer spot on the west side of Highway 65 in the vicinity of Cafaggiolo. Both units, for want of suitable forward sites, remained in place throughout the Gothic Line battles. The 91st had a more difficult assignment than the 34th, and heavy casualties began coming into the clearing station on 11 September. A peak of 409 admissions was reached on the 15th.

The 85th Division went into action on 13 September along the axis of Highway 6524. The clearing station of the organic 310th Medical Battalion, together with a platoon of the 32d Field Hospital, opened about two miles southwest of Scarperia the following day, although the area was well within range of enemy guns. The field hospital stayed behind when the clearing station moved on 23 September to a new area a mile south of Firenzuola, another platoon of the 32d Field moving up to take its place adjacent to the clearing station. Both hospital and station were forced by enemy fire to abandon the site within two hours. A new location somewhat farther to the rear was occupied on 25 September, but the access road was soon knee deep in mud. Until the station moved at the end of the month it was necessary to keep a maintenance truck available to haul out mired ambulances.

Two days after commitment of the 88th Division on 22 September, the clearing station of the organic 313th Medical Battalion opened in the vicinity of San Pellegrino on the Imola road. A platoon of the 32d Field Hospital caught up with the station there on 26 September. It was here that casualties from the bloody battle for Mt. Battaglia were received after litter carries up to 4.5 miles. To man the relay posts along the steep, treacherous evacuation trail, emergency bearers were pressed into service from among line troops, medical battalion headquarters, and the clearing company in addition to those borrowed from the 54th Medical Battalion at corps level.

The second phase of the North Apennines Campaign, from the 1 October assault on the Monghidoro line to the final breakdown in the mud before Pianoro, saw some of the hardest fighting of the entire war in Italy and the most difficult period for the medical service. Fatigue, exposure, and almost continuous rain and cold took a heavier toll in respiratory diseases, trench foot, and psychiatric disorders than enemy weapons took in wounded men, yet the battle casualty rate was higher than for any comparable period since the Salerno landings.[9]

Field medical installations of II Corps were relocated early in October, reflecting the shift of emphasis back to Highway 65. Its site below Futa Pass already a quagmire, the 1st Platoon of the 34th Division clearing station jumped ahead fourteen miles on 4 October to a site southwest of Radicosa Pass, with the 2d Platoon moving to San Benedetto northwest of the pass four days later. Neither site was satisfactory, and the 1st Platoon shifted to Monghidoro on the 12th, where it occupied a battered resort hotel building. The 2d Platoon set up in tents in the same area three days later. The supporting platoon of the 33d Field Hospital was already in Monghidoro, having moved up on 9 October.

Although 34th Division casualties were relatively light in October, difficulties in evacuation continued to require litter bearers in excess of those allotted. Men from kitchen and station sections of the collecting companies were used for this purpose, and in emergencies line soldiers were borrowed from the combat units. Among the hazards were floods, landslides, and consistently poor visibility due to fog and rain. At night ambulance drivers benefited from "artificial moonlight" produced as an aid to transportation generally by beaming searchlights in low trajectory over the area.

By 1 October, clearing stations of the 85th and 91st Divisions were in the vicinity of the road junction where Highway 6524 rejoins Highway 65, with the 2d Platoon of the 33d Field Hospital supporting both. The hospital unit received the greatest number of patients in its history for a comparable period at this site—228 nontransportable priority surgical cases in a 14-day period. On 10 October the 85th Division clearing station moved into the Idice Valley, about 5 miles southeast of Loiano. The clearing station of the 91st moved on 21 October to a site about 2 miles south of Loiano, but the supporting platoon of the 33d Field Hospital was soon rendered useless because mud made it impossible to deliver patients to it. The engineers had to construct a special road of rocks, straw, burlap, and landing-strip matting to get the hospital out early in November. A platoon of the 32d Field Hospital was established about a mile north of Monghidoro on 13 October, primarily in support of the 85th Division, though it was some 3 miles distant from the division clearing station in a direct line and nearer 10 miles by road.

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[9] For Fifth Army as a whole the wounded in action rate for October 1944 was 783 per 1,000 per annum, as compared with 973 for September 1943. For II Corps the October 1944 rate was 1,219 with an admission rate from all causes of 2,970 per 1,000 per annum. See Annual Rpt, Surg, Fifth Army, 1945, p. 63, and Annual Rpt, Surg, II Corps, 1944.

With the shift of the 88th Division to the Sillaro Valley, the clearing station was set up 6 October at Giugnola, and the supporting platoon of the 32d Field Hospital at Belvedere a mile or so closer to the front. The 54th Medical Battalion, responsible for evacuating the II Corps clearing stations, moved its headquarters to the vicinity of Traversa, a mile north of Futa Pass, on 3 October.

In order to give close support to the combat troops, the collecting companies of the divisional medical battalions often operated in two sections, the advance station being as close as possible to the regimental combat zone. The ambulances were kept at the forward post and the litter squads at the battalion aid stations, which were themselves often split into two sections with separate evacuation routes. The rear echelon would move up to the advance site as soon as conditions permitted, while the advance section again moved forward with the combat troops.

Evacuation was to the clearing station of another division if that was more accessible. In late October, when flood waters washed out bridges and obliterated trails, the 85th Division clearing station was completely isolated for two days, during which period casualties were held at the collecting stations or evacuated to other divisions. One regiment of the 85th evacuated to the 88th Division clearing station by a devious route involving the use of artillery prime movers to cross swollen streams and the transfer of patients from one ambulance to another on each such occasion. The 88th Division clearing station also took casualties from elements of the 1st Armored, which were moved into the line on the corps right flank at this time. In several sectors ambulances were washed into the streams and temporarily immobilized if they were not lost altogether. Vehicles of all types were punished unmercifully, with broken springs a commonplace. Nor were vehicles the only casualties. Litter bearers were frequently under fire and exposed to booby traps and the hazards of steep mountain trails in darkness. The toll of killed and wounded among them was high.

During the period 10 September–31 October, the strength of the 54th Medical Battalion was augmented by a collecting company of the 162d Medical Battalion and elements of two ambulance companies from Fifth Army, all of them being used to evacuate division clearing stations. The corps medical battalion also supplied to the divisions 75 litter bearers from its own complement, and approximately 150 Italian infantrymen for litter work. The Italians proved reluctant and unreliable in this capacity, though others of their countrymen made themselves invaluable to the medical service as pack-train drivers and as guides.[10] The 54th Medical Battalion also operated a dental clinic and an eye clinic for II Corps throughout the period of combat.

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[10] Still other Italians, it should be noted, were formidable guerrillas behind the German lines. Indeed, the German high command never learned to cope successfully with the partisans of northern Italy. Kesselring, *Soldier's Record*, pp. 268–79.

Medical Support of IV Corps—On the IV Corps front, where the military mission was to hold rather than to advance, the task of the medical service was less arduous. The 370th Regimental Combat Team of the 92d Division was supported by a collecting company and clearing platoon of the organic 317th Medical Battalion. Task Force 45 was supported by elements of the corps medical battalion, the 163d. Since the antiaircraft units that made up the bulk of the task force did not have enough medical personnel for infantry operations, the 163d supplied aidmen and forward litter bearers as well as performing its normal collecting and clearing functions. The initial increment of the Brazilian Expeditionary Force, the 6th Combat Team, was supported by a collecting company and clearing platoon of the 1st Brazilian Medical Battalion; and Combat Command B of the 1st Armored Division was cared for by Company B of the 47th Armored Medical Battalion. The 6th South African Armoured evacuated the army area through its own medical channels. Field hospital units for forward surgery were not available to reinforce the IV Corps medical service, but the close proximity of evacuation hospitals and relatively easy evacuation routes in large measure compensated for the lack.[11]

The advent of the Brazilians created new problems for the IV Corps surgeon, Lt. Col. Austin W. Bennett, particularly in matters of liaison and of sanitation, since Brazilian standards were less rigorous than American. An American medical officer was placed on duty with the 1st Brazilian Infantry Division to assist with training, medical records, and equipment. At one period, when the Brazilian sector adjoined that of the 1st Armored, a Brazilian medical officer was detailed to one of the treatment stations of the 47th Armored Medical Battalion to act as interpreter and to assist with Brazilian casualties passing through the station. The corps collecting company evacuating the BEF sector, in addition to its normal functions, supplied men, litter bearers, and equipment for battalion aid stations of the 6th Combat Team.

Medical installations of IV Corps encountered the same difficulty with rain and mud, and the same disadvantages of terrain that were a constant hazard in the II Corps area, but, without the burdens of an offensive, the conditions were more readily endured. Only in the sector where Combat Command B operated after 1 October, attached to the 6th South African Armoured, were conditions comparable to those on the II Corps front. Primarily for this reason, the unit was brought under II Corps control at this time. When CCB moved north on Highway 64 early in October, the supporting treatment station for the first time in its history was unable to find enough level ground to pitch its tents and was forced to set up in a village where buildings were available.

Inactive Period

With Fifth Army in defensive positions for the winter, little movement of medical units was required. Collecting and clearing companies of the organic medical battalions accompanied their combat formation as they were rotated to the Montecatini rest area, while those remaining at the front made themselves as secure and as comfortable as conditions permitted. Clearing stations, collecting stations, and even battalion aid stations set up in buildings or shells of buildings. When these were not available, tents were winterized. As had been the case in the previous winter at the Gustav Line, caves and cavelike rock formations were utilized, often floored with lumber from discarded shell cases. Personnel of the forward stations within range of enemy artillery dug in, roofing foxholes with salvaged timbers and sandbags in a manner reminiscent of Anzio. Stoves were issued for wards and operating rooms.[12]

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[11] The main sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1944; (2) Annual Rpt, Surg, IV Corps, 1944; (3) Hist, 317th Med Bn, 16 Oct 42–15 Jul 45; (4) Annual Rpt, Surg, 1st Armd Div, 1944; (5) Hist, 47th Armd Med Bn, Sep, Oct 44; (6) Annual Rpt, 163d Med Bn, 1944.

II Corps Front—The existence of a static front did not mean that medical units were idle. In the II Corps sector continuous patrol activity and intermittent shelling accounted for enough casualties to keep forward stations in business even without the disease and injury toll inevitable under the circumstances of weather and terrain. At the same time, the task of evacuation of casualties was enormously more difficult with the steep and twisting roads now icy and treacherous under drifting snow, and litter trails obliterated.

Ski litters were used successfully in some sectors. One collecting company of the 34th Division used a toboggan to evacuate its forward station during January. The 91st Division equipped one litter squad in each collecting company with snowshoes, but other medical battalions found them of little value. More generally effective were ice creepers, worn by litter bearers of all divisions in the line.

Medical units themselves continued to suffer casualties from enemy shells landing in station areas or on highways, and litter bearers were occasionally fired upon, despite their Red Cross identification.

The 32d Field Hospital reverted to army control in November, two of its platoons being transferred to the IV Corps sector, where they acted as small evacuation hospitals. The 33d Field continued to support II Corps, with one platoon east of Monghidoro and one in the Sillaro Valley, each serving elements of two divisions. Both field hospitals and clearing stations held patients somewhat longer than would have been the case under conditions of active combat, the clearing stations in particular doubling as station hospitals for garrison troops.

The four collecting companies of the 54th Medical Battalion—including one attached from the 162d—continued to evacuate divisional clearing stations

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[12] Principal sources for this section are: (1) Annual Rpts, Surg Fifth Army, 1944, 1945; (2) Annual Rpts, Surg, II Corps, 1944, 1945; (3) Annual Rpts, Surg, IV Corps, 1944; (4) Annual Rpt, 54th Med Bn, 1944; (5) Monthly Rpts, 54th Med Bn, Nov 44–Mar 45; (6) Annual Rpts, 163d Med Bn, 1944, 1945; (7) Annual Rpts, Surg, 1st Armored, 34th, 85th, 88th, 91st, 92d Divs, 1944 1945; (8) Annual Rpt Surg, 10th Mountain Div, 1945; (9) Unit Hist, 10th Mountain Med Bn, Jan–Mar 45; (10) Hist, 47th Armored Med Bn, Jan–Mar 45; (11) Opn Rpts, 109th Med Bn, Nov 44–Mar 45; (12) Opn Rpts, 310th Med Bn, Nov 44–Mar 45; (13) Opn Rpts, 313th Med Bn, Nov 44–Mar 45; (14) Unit Hist 316th Med. Bn, Nov 44–Mar 45; (15) Hist Data, 317th Med Bn, Nov 44–Mar 45; (16) Annual Rpts, 32d and 33d Field Hosps, 1944; (17) Annual Rpts, 32d and 33d Field Hosps, 1945.

TREATING A WOUNDED SOLDIER *in a 317th Medical Battalion collecting station near Massa, February 1945.*

through an ambulance control point on Highway 65 below Radicosa Pass. Bed quotas from each Fifth Army hospital were telephoned to the control point daily and ambulances routed accordingly. For two weeks in mid-November a platoon of the 683d Clearing Company, 54th Medical Battalion, relieved the 88th Division clearing station at Giugnola, but otherwise the chief function of the company was the operation of special clinics for II Corps. The dental and eye clinics at Traversa remained in operation throughout the winter, and a venereal disease treatment center, for new cases of gonorrhea only, was opened at the same site on 11 November.

IV Corps Front—IV Corps front was more active than that of II Corps, the 92d Division fighting limited engagements in November and February, and the 10th Mountain and 1st Brazilian Divisions taking part in more extended operations in February and March. Here, too, snow and cold were limiting factors, with rain a continuing hazard in the coastal sector. The medical service of

IV Corps was also compelled to resort to a variety of expedients to overcome deficiencies in the medical complement of some of its combat units. In the early months of the winter the 163d Medical Battalion continued to give combat medical support to Task Force 45 and, with the assistance of a collecting company attached from the 161st Medical Battalion, to evacuate divisional clearing stations. The battalion also gave first echelon support to service troops and others without medical detachments of their own, operated a venereal disease hospital for the corps, and supplied an expansion unit for one of the evacuation hospitals in the area. The 671st Collecting Company, supporting troops on the right flank of the corps sector, was provided with equipment to operate a 25-bed provisional hospital, should heavy snows isolate the area. As on the II Corps front, additional ambulances were supplied by Fifth Army.

In order to support the 366th Infantry, which was attached to the 92d Division on its activation in November, one of the collecting companies of the 317th Medical Battalion operated for a time in two sections. For the February offensive, in which all four regiments of the 92d were engaged simultaneously, a provisional collecting company was used, with 2 medical officers, 9 medical and 6 surgical technicians, and 12 ambulance drivers drawn from the regular companies, and Italian litter bearers. While the division was engaged simultaneously on the coast and in the Serchio Valley, both clearing platoons were in operation, reinforced by ambulances from corps. Later in February, when the 473d Infantry was also attached to the 92d, it was again necessary for one collecting company to support two combat teams.

In the Mt. Belvedere offensive and subsequent operations west of Highway 64, the medical units supporting the 10th Mountain Medical Battalion did not follow the conventional organizational pattern. Equipment was designed for mule pack or hand carry, and assigned vehicles were reduced in number accordingly. The Table of Organization called for 126 animals but for only 15 motor ambulances, all of them in the clearing company. Each of the 3 collecting companies had 44 litter bearers instead of the 36 allotted to infantry companies. The clearing company was divided into 3 rather than 2 platoons. Since the whole division was set up for animal transportation—there were more than 6,000 animals in the T/O—there was a sizable veterinary company, and there were veterinary sections at the battalion level in the medical detachment. The division arrived in Italy, however, without its animals. Italian mule pack trains were supplied, but transportation deficiencies were otherwise made up by motor vehicles. The medical battalion received 30 instead of 15 ambulances, which were transferred from the clearing to the collecting companies. Jeeps were borrowed from line units.

In the first battle test, the 10th Mountain Medical Battalion performed like a veteran outfit, amply justifying the care with which its personnel had been selected and trained. Like the combat formations, medical units moved into position under cover of darkness. Collecting stations, and often clearing stations as well, were generally within range of enemy artillery, and many casualties resulted, though few of them were psy-

10th Mountain Division Aid Station on Slopes of Mt. Belvedere

chiatric. Litter squads of one company worked the first 3 days of the offensive—72 hours—without sleep and with very little food. Litter carries were down precipitous mountain sides, frequently taking as long as 10 hours, yet the same squad would return immediately for another casualty.

At two points, division engineers built cable tramways to bring the wounded out from otherwise almost inaccessible positions. The first of these was completed the morning of 21 February from Mt. Mancinello—Pizzo di Campiano ridge captured the night of the 19th. A difficult 3- or 4-hour haul down the ridge was reduced to 4 minutes, and the carrying time between aid station and collecting station cut to 6 or 7 hours. The other tramway, some 5 miles southwest of Vergato, spanned a deep valley across which the only passage was a narrow, tortuous dirt trail unusable even by jeeps. In the latter stages of the offensive, when the 85th RCT was digging in on Mt. della Spe, the only possible evacuation route lay through the village of Castel d'Aiano, which was shelled by German guns every time a vehicle moved in the streets.

Tramway Ascending to Mt. Mancinello–Pizzo di Campiano Ridge

On the evening of 3 March the collecting station of Company C was hit by a German shell that exploded a booby trap and completely demolished the building in which the station was housed. Two chaplains and one enlisted man were killed, and 13 other station personnel more or less severely wounded, one of whom later died. Fortunately there were no patients, since Company B, in the most forward position, was evacuating the entire division that day. Between 0600 and midnight, more than 200 casualties passed through Company B's station, including 40 prisoners of war and a few partisans.

Training and Re-equipment—These combat actions, involving as they did relatively recent arrivals in the theater, did not interfere with a general program of training and refurnishing the field medical service on an army-wide basis. Officers with more than twenty-four months of combat duty were replaced by fresher men, while the veterans went to field and evacuation hospitals to polish up their techniques. Units were brought up to strength, line soldiers being trained as medical replacements where no others were available. Ambulances and other vehicles were systematically overhauled or replaced. Supply levels were built up. Physical conditioning went along with recreational activities. At the same time, the special problems anticipated for the coming spring offensive were given individual attention.

After its own positions were stabilized just before the middle of March, personnel of the 10th Mountain Division conducted a school in methods of mountain evacuation. At a site near the mouth of the Arno River, medical detachments and battalions were given special training in the technique of river crossings along with their respective combat elements. General Martin was no less determined than General Truscott to make the next campaign the last.[13]

Hospitalization in the Army Area

Hospitalization During the Fall Offensive

The deployment and use of Fifth Army hospitals during the Gothic Line battles and the subsequent advance toward Bologna were always conditioned by the unfavorable terrain, the poor road network, and the weather. On the II Corps and IV Corps fronts, enemy artillery fire delayed the forward movement of hospitals, or forced the abandonment of otherwise acceptable sites, while evacuation lines stretched out and ambulances broke down under constant use. To these disadvantages was added a persistent shortage of beds that could be compensated for only by continuous overloading of facilities and by improvisations at all echelons of the medical service.[14]

Among the expedients in general use were the practice of employing surgical teams from evacuation hospitals in field hospital units or other evacuations more strategically placed; and of putting personnel from less active units on temporary duty with those carrying heavy patient loads. Surgeons were also exchanged between evacuation and general hospitals for 6-week intervals to give each group a more realistic understanding of the problems of the other. Clearing and collecting companies were consistently used to augment the beds of evacuation hospitals in the army area.

Hospital Support of II Corps—With II Corps making the main U.S. effort against the Gothic Line, the bulk of the Fifth Army hospitals were eventually deployed along the axis of Highway 65, but there was an unavoidable lag behind troop movements. When the assault was launched on 10 September, the nearest evacuation hospital was the 15th, which opened on that date in a large school building in Florence. All transportable casualties of the first two days went there. On 12 September the 94th Evacuation moved up to Pratolino, about six miles closer to the front but still in the rear of the assembly area from which the 34th and 91st Divisions had jumped off. (*Map 35*)

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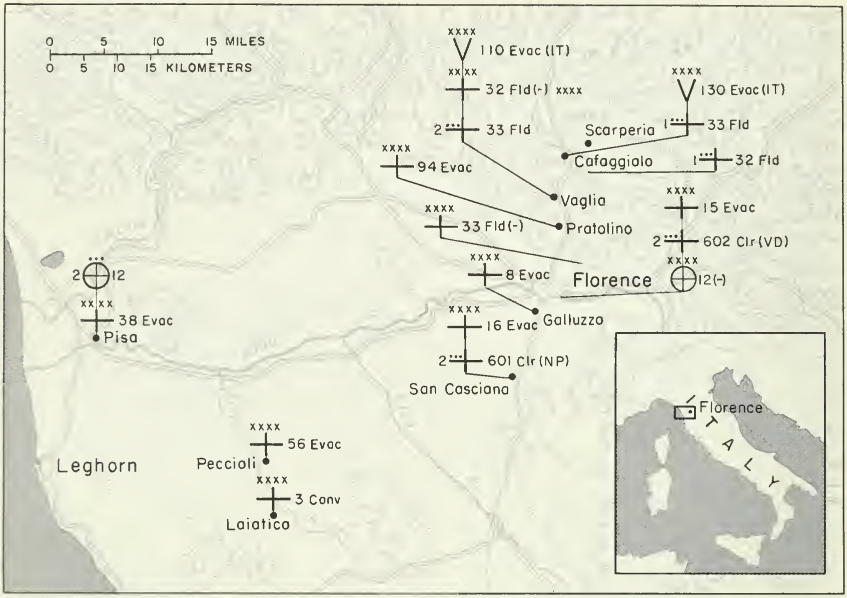
[13] For detailed preparations during this period, see pp. 458–60, below.

[14] Principal sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944; (2) Annual Rpt, Surg, Fifth Army, 1944; (3) Unit rpts of med units mentioned in text.


0 5 10 15 MILES
0 5 10 15 KILOMETERS
110 Evac (IT)
32 Fld (-)
33 Fld
94 Evac
130 Evac (IT)
Scarperia
33 Fld
Cafaggiolo
32 Fld
Vaglia
15 Evac
33 Fld (-)
Pratolino
602 Clr (VD)
8 Evac
Florence
12 (-)
2 12
38 Evac
Pisa
16 Evac
Galluzzo
601 Clr (NP)
San Casciano
Florence
56 Evac
Leghorn
Peccioli
3 Conv
Laiatico

MAP 35—Fifth Army Hospitals and Medical Supply Dumps, 18 September 1944

At Pratolino, where it was housed in buildings, the 94th Evacuation Hospital took the more serious casualties from the entire corps for the next two weeks, the overflow going back to the 15th in Florence. Medical cases and a few light battle wounds were sent still farther back, to the 8th and 16th Evacuations in the San Casciano area south of Florence. The Gothic Line had been overrun, and the 88th Division's costly drive down the Santerno Valley was under way before the 56th Evacuation Hospital opened in tents on 24 September at Scarperia, south of Il Giogo Pass on Highway 6524.

Though it was a 750-bed unit, the capacity of the 56th was quickly overtaxed. The heavy influx of surgical cases forced the establishment of an overflow preoperative ward, while medical cases also constituted an abnormally heavy load. In an effort to lighten the burden on the 56th, General Martin sent an advance party from the 16th Evacuation Hospital to Firenzuola on 27 September to locate a site for that unit, but enemy fire drove the men back and the move had to be postponed. Before the Firenzuola area was safe, the rainy season had set in, and the prospective site had to be ditched and protected by a levee from a neighboring stream. It was 4 October before the 16th Evacuation took over the role of most forward army hospital.

The 16th was in position to take casualties from both flanks of the II Corps front, and, for 10 days, admissions were heavy, reaching a peak of 203 on 15 October. At the same time, the 56th at Scarperia continued to operate at capacity, and the 94th, still at Pratolino, set a new unit record for surgical cases in the first two weeks of October.

As the weather steadily worsened, it became increasingly important to get hospital beds as far forward as possible. Evacuation over mud-clogged roads was becoming more difficult, and there was danger that Futa Pass might be blocked by snow. To ease the pressure, the 750-bed 8th Evacuation Hospital moved to Pietramala, just south of Radicosa Pass, on 14 October; and the following day the 94th moved up to Monghidoro, about five miles farther north on Highway 65. The 94th was replaced at Pratolino by a fixed hospital.

Both forward hospitals quickly ran into difficulties. The 8th was sited in a rolling field, already churned to mud by heavy guns that were still there when the first loads of hospital equipment arrived. Ward tents were pitched on sloping ground, and the operating tent was given a level base only by cutting away the top of a knoll. Conditions at Monghidoro were even worse, for the area was still under artillery fire. So great, indeed, was the danger from enemy shells that the 94th Evacuation closed 5 days after it opened. Two medical officers, 5 nurses, and 10 enlisted men stayed at Monghidoro to care for 30 nontransportable chest and abdominal cases, and to guard the equipment. Twenty-one nurses and 70 enlisted men were sent back to rest areas; the remainder of the nurses, a shock team, and 2 surgical teams were put on temporary duty with other hospitals; and the rest of the personnel went into bivouac with the 8th Evacuation at Pietramala.[15] On 29 October, after II Corps had been ordered to take defensive positions, surgical personnel of the 94th returned to Monghidoro. The medical staff and all others not needed at the forward site went back to Florence, where they joined the 15th Evacuation, setting up 380 beds for medical cases only.

Meanwhile a new departure had been taken in the treatment of neuropsychiatric casualties.[16] As the strain of weeks of bitter fighting in the most difficult conditions of weather and terrain began to be felt in a rising toll of psychiatric disorders, General Martin set up a psychosomatic center toward the end of October in the vicinity of Cafaggiolo, just north of the point where Highway 6524 branches off from 65. Core of the center was the 2d Platoon of the 601st Clearing Company, 161st Medical Battalion, which had been serving as Fifth Army neuropsychiatric hospital since December 1943. The 1st Platoon of the same company was established on 23 October adjacent to the neuropsychiatric hospital to specialize in gastrointestinal cases, many of which were believed to be of psychosomatic origin. On 1 November the 1st Platoon of the 602d Clearing Company, 162d Medical Battalion, which had been operating an expansion unit for the 15th Evacuation since 18 September, also joined the psychosomatic center, but took minor disease as well as gastrointestinal cases.

The 3d Convalescent Hospital moved

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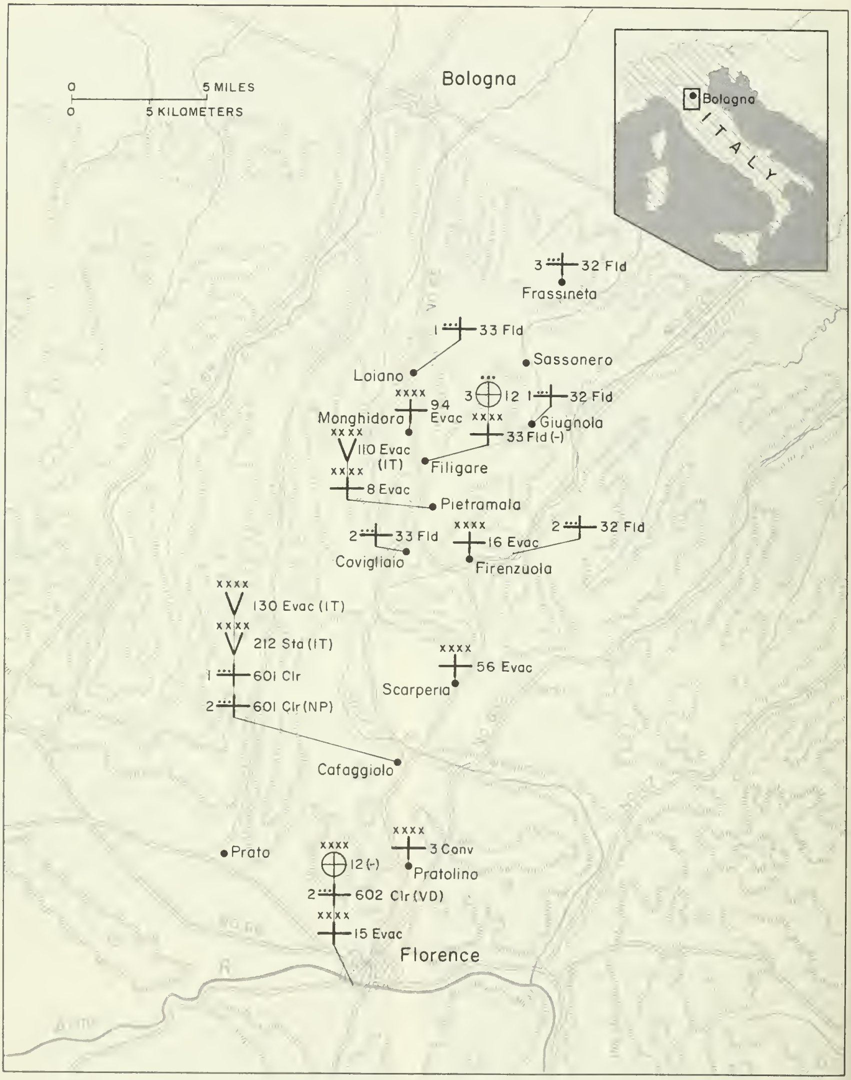
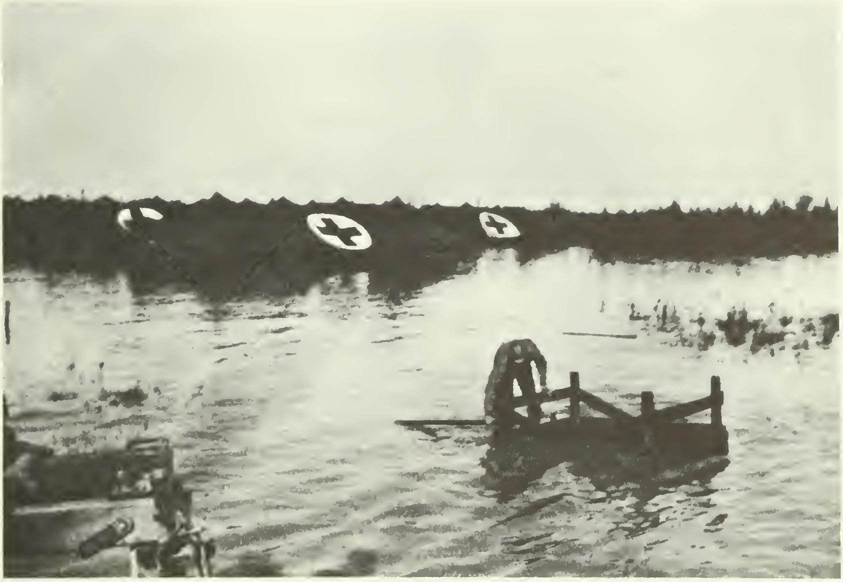
[15] Periodic Rpt, 94th Evac Hosp, Jan–Aug 45. The 1944 Annual Report says the Covigliaio area, roughly three miles south of Pietramala, but the later report is more detailed, and in this case more probable, since mess equipment was presumably left at Monghidoro.

[16] See pp. 450–51, below.


0 5 MILES
0 5 KILOMETERS
Bologna
Bologna
ITALY
3 32 Fld
Frassineta
1 33 Fld
Sassonero
Loiano
XXXX
94 Evac
Monghidoro
3 12
1 32 Fld
XXXX
33 Fld (-)
Giugnola
XXXX
110 Evac (IT)
Filigare
XXXX
8 Evac
Pietramala
2 33 Fld
XXXX
16 Evac
2 32 Fld
Covigliaio
Firenzuola
XXXX
130 Evac (IT)
XXXX
212 Sta (IT)
1 601 Clr
2 601 Clr (NP)
XXXX
56 Evac
Scarperia
Cafaggiolo
XXXX
3 Conv
Prato
XXXX
12 (-)
Pratolino
2 602 Clr (VD)
XXXX
15 Evac
Florence

Map 36—Fifth Army Hospitals and Medical Supply Dumps Supporting II Corps, 25 October 1944



38TH EVACUATION HOSPITAL FLOODED AT PISA, NOVEMBER 1944

up to Pratolino on 26 September. (*Map 36*)

Hospital Support of IV Corps—The lightly held IV Corps sector started the Gothic Line campaign with the support of only one evacuation hospital, the 750-bed 38th, which opened in the outskirts of Pisa on 15 September. The safety factors were: the relatively minor military operations anticipated; the proximity of Florence to the IV Corps right flank, with good roads available; and the easy access in emergency to base hospitals in the Leghorn area. (*See Map 35.*) The 38th Evacuation was augmented by a collecting company of the 162d Medical Battalion, and by 25 Brazilian medical officers, 20 nurses, and 60 enlisted men to care for BEF casualties.[17]

All efforts to secure an additional hospital for the support of IV Corps failed until mid-October, when General Martin was notified that the 250-bed 29th Station Hospital, then inoperative in North Africa, would be converted into a 400-bed evacuation hospital for Fifth Army. The unit was brought immediately to Italy, and the work of conversion carried out with such dispatch that it was ready to take patients as the 170th Evacuation Hospital the first week of November.

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[17] Figures for Brazilian personnel are from reports of the 16th Evacuation Hospital, to which they were later transferred. The available reports of the 38th do not specify numbers.

It was none too soon. On the night of 2–3 November the flooding Arno River burst its banks, and a wall of water poured into the area occupied by the 38th Evacuation. Before morning the water was 4 to 6 feet deep in the hospital area. The 495 patients in the hospital were hastily carried 300 yards to the relative safety of a partially destroyed barracks being used by the 12th Medical Depot Company. There, counting both patients and hospital personnel, more than 800 persons were housed in space designed to accommodate about 200. Enough equipment and supplies were saved to operate the hospital for 48 hours, which proved to be long enough for the inundated roads to become usable.

As soon as vehicles could get through, a pool of fifty ambulances formed by the 162d Medical Battalion picked up the stranded patients and distributed them among fixed hospitals in Leghorn and Fifth Army units in the II Corps area. Although most of its equipment was ultimately salvaged, the 38th Evacuation was for the time being rendered inoperative, and its personnel were placed on temporary duty with other medical installations.

To replace the 38th Evacuation, the 170th opened at Viareggio on 6 November, and a unit of the 32d Field Hospital, augmented by a platoon of the 615th Clearing Company, 163d Medical Battalion, established a 250-bed hospital at Montecatini. The Viareggio site was close to the 92d Division's front in the coastal sector, while Montecatini was accessible both to the center and the right flank of IV Corps. A portion of a civilian hospital in Lucca, about midway between the two sites on an east-west line, was also requisitioned for nontransportable casualties, which were cared for by surgical teams of the 38th Evacuation.

Winter Dispositions

By early November it was clear that military activity would be strictly limited for some time to come, and the task of preparing army hospitals for the winter began. The 16th Evacuation, which had been twice flooded at Firenzuola, was moved back on 10 November to Pistoia, where Highway 64 enters the mountains from the Arno plain. The site had been intended for the 38th, but that unit was still immobilized.[18]

The Brazilian medical personnel were transferred at this time from the 38th Evacuation to the 16th, which was now just behind the Brazilian sector. Normally the Brazilians took complete care of their own wounded, but when the load was heavy U.S. medical officers served as assistant surgeons on Brazilian teams. Brazilian surgeons similarly acted as assistants on U.S. teams when American casualties were heavy.

On 19 November the 38th Evacuation took over the Montecatini site, as well as the clearing platoon that had been operating there. The field hospital unit from Montecatini moved up Highway 64 to the vicinity of Porretta in the Brazilian sector where, with two Brazilian and two U.S. surgical teams, it operated as a small evacuation hospital throughout the winter. Another unit of the 32d Field Hospital supplanted the 170th Evacua-

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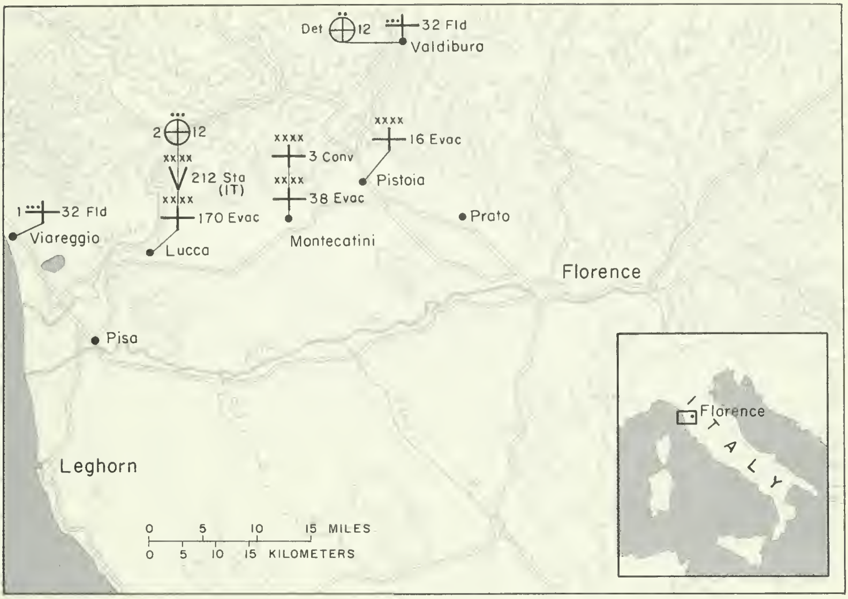
[18] Principal sources for this section include: (1) Annual Rpts, Surg, Fifth Army, 1944, 1945; (2) Annual Rpts, Surg, II Corps, 1944, 1945; (3) Annual Rpt, Surg, IV Corps, 1944; (4) Unit rpts of the med units mentioned in text.


Det
12
32 Fld
Valdiburo
2
12
212 Sta (IT)
170 Evac
3 Conv
38 Evac
16 Evac
1
32 Fld
Viareggio
Lucca
Montecatini
Pistoia
Prato
Florence
Pisa
Leghorn
0 5 10 15 MILES
0 5 10 15 KILOMETERS
Florence
I T A L Y

MAP 37—Fifth Army Hospitals and Medical Supply Dumps on the IV Corps and 92d Division Fronts, 15 January 1945

tion at Viareggio after the latter had been twice damaged by enemy shells. The 170th moved on 25 November to Lucca, carrying with it 150 patients, many of them litter cases. (*Map 37*)

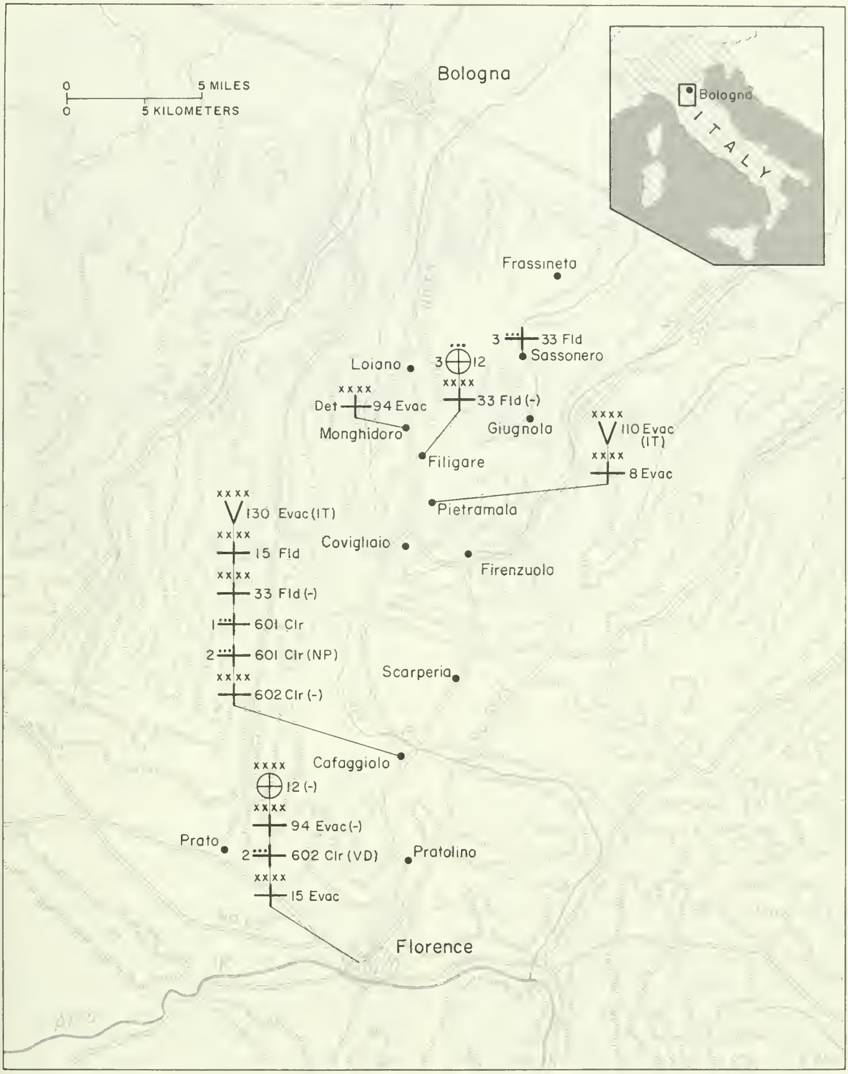
The 3d Convalescent Hospital, deep in mud at Pratolino, found the task of winterizing its 300 tents too great and in late November began moving to Florence for the winter. Before the move was completed, however, adequate quarters were found in a group of hotel buildings in Montecatini, where the hospital was established just before the end of the year. One factor involved in the change of plans was the advantage of having a convalescent hospital located in a rest area where patients were able to benefit from the recreational facilities available. In mid-January, Brazilian personnel were attached to the 3d Convalescent.

Other Fifth Army hospitals remained where they were throughout most or all of the winter, making do as best they could against the hazards of mud, cold, snow, and wind. A move to reopen the 94th Evacuation at Monghidoro late in December was abandoned, and the medical service of that unit continued to operate in Florence in conjunction with the 15th Evacuation, taking half of the medical cases admitted to the joint installation, which functioned under a single administration as a 1,000-bed station hos-

Brazilian Nurses Attached to the 16th Evacuation Hospital

pital. The surgical service of the 94th remained at the forward location, despite cold and snow that reached a depth of four feet, until mid-February, when renewed enemy shelling again forced abandonment of the site. The surgical service then ceased to function as such, but surgical teams were placed on temporary duty with the 32d Field and the 8th Evacuation. A number of the nurses also went on detached service with other units. Tentage was left at Monghidoro under guard. (*Map 38*)

A few miles farther back on Highway 65, the 8th Evacuation stuck out the winter at Pietramala, the coldest spot on the II Corps front. Tents were floored and walled to a height of 4½ feet with wood, and reinforced by overhead beams against the weight of the snow, but even these precautions were not always protection against the gales that swept periodically across the sloping hospital area. On 8 December, before the winterizing was complete, a double ward tent, flooring sidewalls and all, was lifted clear off the ground, carried over 6 wards and dropped on another tent. All together, 8 tents were blown down and others damaged. The hospital census was low at the time and no patients were injured, but it was necessary to send 30 or 40 postoperative cases to the 15th Evacuation in Florence. After that ex-


Bologna
0 5 MILES
0 5 KILOMETERS
Bologna
ITALY
Frassineta
3 33 Fld
Sassonero
Loiano
3 12
XXXX
Det 94 Evac
Monghidoro
33 Fld (-)
Giugnola
Filigare
XXXX
110 Evac (IT)
XXXX
8 Evac
Pietramala
XXXX
130 Evac (IT)
XXXX
15 Fld
Covigliaio
Firenzuola
XXXX
33 Fld (-)
1 601 Clr
2 601 Clr (NP)
Scarperia
XXXX
602 Clr (-)
Cafaggiolo
XXXX
12 (-)
XXXX
94 Evac (-)
Prato
2 602 Clr (VD)
Pratolino
XXXX
15 Evac
Florence

MAP 38—Fifth Army Hospitals and Medical Supply Dumps on the II Corps Front, 15 January 1945 perience, wood and prefabricated steel buildings were placed at the two ends of each row of ward tents and secured by steel cables anchored to buried logs. As if wind and cold were not enough, the 8th Evacuation also wrestled with the perennial problem of mud. At least 5,000 truckloads of rock were used to maintain roads in the vicinity of the hospital area before the unit left the site late in April. As the most forward hospital in the II Corps zone, the 8th Evacuation handled the bulk of the casualties for the first three months of 1945, battle wounds exceeding medical cases.

The Scarperia site, where the 56th Evacuation Hospital spent the winter, was only slightly more favorable than that of the 8th at Pietramala. As at the more forward installation, cold, snow, and wind were intermittent hazards, and the battle against mud a never-ending problem. Patients came mostly from the corps right flank, down Highway 6524.

In response to General Martin's urgent appeal for more beds, the 15th Field Hospital was returned to Italy late in the year, one platoon coming from southern France and the other two from Corsica. Just before the end of December the unit was set up east of Highway 65 and two or three miles north of Cafaggiolo, where it operated as a 400-bed hospital for medical cases. With specialists from the 6th General Hospital attached, the 15th Field took over the psychosomatic work performed since October by the 1st Platoon of the 601st Clearing Company, the latter unit becoming a hospital for general medical and slightly wounded cases in mid-January. The 1st Platoon of the 602d Clearing Company, which had also been associated with the psychosomatic center at Cafaggiolo, remained in the area for another month as a medical hospital, then shifted to Prato, between Florence and Pistoia on the edge of the Arno plain, where it continued in the same capacity. The neuropsychiatric hospital remained throughout the winter at Cafaggiolo, taking cases direct from the clearing stations and from the 15th Field Hospital.

In connection with its general medical work, the 15th Field made detailed studies of the major types of medical cases occurring among front-line troops to determine whether a strictly medical forward hospital could retain such cases in the army area and thus hasten return to duty. A section of the 2d Medical Laboratory was attached. At the same time, observers were sent to other field hospitals where they studied the technique of operating as forward surgical units in preparation for a similar role in the spring offensive.

In the IV Corps sector no changes were made in hospital sites after the first of the year. The enemy thrust in the Serchio Valley late in December led to preparations for heavy casualties including plans for reinforcing the 170th Evacuation at Lucca, should that be necessary. Pigeons were sent to the 170th as insurance in case phones were down, and all of the hospital's patients were evacuated to base installations. The counterattack, however, was quickly stopped, and medical units remained in place.

In Florence the venereal disease hospital and the Fifth Army prosthetic and operative dental clinic, both administered by the 2d Platoon of the 602d Clearing Company, 162d Medical Battalion, took patients from II and IV Corps of Fifth Army. The lull in hostil-

PERSONNEL
CHIEF OF SURGICAL SERVICE
CHIEF OF MEDICAL SERVICE

8TH EVACUATION HOSPITAL AT PIETRAMALA, *coldest spot on the II Corps front.*

ities was reflected in late March by an increase in venereal beds from 250 to 290.

Evacuation From Fifth Army

Evacuation to Army Hospitals

Throughout the North Apennines Campaign and the winter stalemate, evacuation from corps to army installations was carefully controlled by the Fifth Army evacuation officer, Colonel Camardella. As has already been noted, the 54th Medical Battalion, responsible for evacuation from II Corps, maintained an ambulance control point on Highway 65 to which daily quotas for each evacuation hospital were telephoned every morning. During the early part of the campaign, inadequate bed strength and heavy casualties made it impossible to follow a fixed policy with consistency, but so far as circumstances permitted, the patient census of the most forward hospital was kept relatively low to guard against sudden emergency. In general, evacuation during daylight hours was to installations farther to the rear, while the most forward unit took the bulk of the casualties at night to shorten the hazardous ambulance runs. Except in emergency, not more than 100 surgical cases were admitted to any given hospital in a single day. When the number of casualties began to decline in

DANGER
ROAD UNDER
HEAVY SHELL-
FIRE KEEP
INTERVAL

Ambulance on Icy Road, Loiano Area

November, a system of triage at the ambulance control point was instituted, patients being routed to those hospitals best equipped to care for them.[19]

All transportation of patients within the corps area was by ambulance over roads often deep in mud or heavy with snow. During the early months of 1945, vehicles were frequently able to cover no more than five miles an hour. The system nevertheless worked satisfactorily both under the most severe conditions of combat and in the worst weather of the winter.

On the IV Corps front, supported as it was by only one evacuation hospital until mid-November, no selectivity was possible. Even after November, when evacuation hospitals were sited at Lucca,

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[19] Principal sources for this and the following section are: (1) Annual Rpts, Surg, Fifth Army, 1944, 1945; (2) *Fifth Army History*, pt. VII, pp. 48–50; (3) Annual Rpts, Surg, II Corps, 1944, 1945; (4) Annual Rpt, Surg, IV Corps, 1944; (5) Annual Rpts, 1944, 1945, of 54th, 161st, 162d, 163d Med Bns; (6) Annual Rpt, Med Sec, MTOUSA, 1944; (7) Final Rpt, Plans and Opns Off, Office of Surg, MTOUSA; (8) Hist Rpts, 1944 and 1945, of 802d and 807th Med Air Evac Transport Squadrons, AF; (9) Annual Rpt, 41st Hosp Train, 1944; (10) Annual Rpt, Surg, PBS, 1944; (11) Semimonthly Med Sitreps, Surg, PBS, Sep 44–Mar 45.

Montecatini, and Pistoia, the road network did not permit the full application of a quota system. The 163d Medical Battalion found it necessary to operate ambulance control posts on each of the main axes of the corps' advance in order to rout emergency cases to the nearest hospital. It was nevertheless possible by co-ordinating these posts to regulate the flow of patients to some extent.

Evacuation to Base Hospitals

The problem of clearing Fifth Army hospitals during the first several weeks of the North Apennines Campaign was complicated by factors outside the control of the army surgeon. At the start of the offensive early in September there were only two fixed hospitals in northern Italy, the 64th General near Leghorn and the 55th Station attached to it. A few other units were on the way, but the prospect of an early breakthrough into the Po Valley precluded establishment of more beds than were absolutely necessary south of the mountains. All casualties from southern France, moreover, were still going to Naples, leaving few beds available for movement elsewhere. At the same time, the shortage of mobile beds in the Fifth Army area made it essential to transfer patients to base installations without unnecessary delay.

The only base hospitals available were those in Rome and Naples, and the only means of reaching them was by air. For the first 10 days of the offensive, patients from the forward evacuations were carried by ambulance to the Rosia airfield southwest of Siena and some 50 miles from Florence, whence they were flown to the rear by planes of the 802d and 807th Medical Air Evacuation Transport Squadrons. Before 20 September, 936 patients went to Naples and 2,295 to Rome. On that date the Florence airfield became operable, and by the last day of the month 1,445 Fifth Army patients had been flown from that field to Naples, along with 1,397 to Rome.[20]

The 24th General Hospital opened in Florence on 21 September with 1,500 beds, and a week later 2 station hospitals with an aggregate of 1,250 beds moved into the Leghorn area to which IV Corps casualties were being routed. Despite these additional fixed beds, the situation became acute in the first week of October when bad weather prevented any airlifts to the rear. In addition to a capacity load of patients from forward evacuation hospitals, the 24th General also had to find room for those already in holding units at the Florence airfield. During the second week of October, Fifth Army was given air priority over Seventh Army, but intermittent poor weather conditions prevented full use of it, and in the last week of the month all planes were grounded. The limited number of flying days held air evacuation to Rome and Naples to 5,000 for October and left forward hospitals dangerously crowded. As a relief measure, all transportable patients from the 24th General were carried by ambulance to Leghorn late in the month. On 21 October control of air evacuation passed from the Surgeon, Fifth Army, to the Surgeon, Peninsular Base Section.

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[20] These and subsequent figures for air evacuation in the text are from the reports of the two MAETS squadrons. They do not agree entirely with figures given in the annual report of the Surgeon, MTOUSA, for 1944, which are for patients received by air at PBS hospitals, but it is believed the MAETS tabulations are the more accurate.

Meanwhile, as the prospects for a breakthrough before winter faded, more fixed beds were coming into northern Italy. Two thousand more beds were established during October in the Leghorn area, and the 250-bed 55th Station Hospital took over the Pratolino site from the 94th Evacuation, bringing the total to 4,750 at Leghorn and 1,750 in the Florence area.

In November, with southern France no longer a drain upon the facilities of the Mediterranean theater, the situation eased considerably. Patients from the II Corps area were thereafter triaged at the Florence airfield, being flown to the rear if aircraft were available or, it not, distributed among fixed hospitals in the vicinity. The 2,000-bed 12th General Hospital joined the group at Leghorn early in December. January saw the establishment of a 500-bed station hospital in Florence, one in Pisa, and the 1,500-bed 70th General in Pistoia, bringing the T/O total to 11,000 fixed beds. In February air evacuation began between Florence and Leghorn, and rail evacuation was started between Florence and Leghorn by way of Montecatini.

Evacuation from Fifth Army units to airfields or to base hospitals in the immediate rear of the army was by the 161st and 162d Medical Battalions, both of which had reduced their collecting companies to ambulance companies in order to supply personnel to their clearing platoons for the operation of special hospitals. In the II Corps area, the 162d detailed enlisted men late in November to operate emergency aid stations along Highway 65 for stranded ambulances.

Air evacuation to base hospitals in Naples continued throughout the winter on a modest scale, but the emphasis was increasingly on holding in army hospitals all patients who might recover in time for duty during the planned spring offensive. Evacuation policy in army installations during the first three months of 1945 was 60 to 120 days.

Medical Supplies and Equipment

In preparation for the Gothic Line offensive the 3d Storage and Issue Platoon of the 12th Medical Depot Company moved to the vicinity of Florence the last day of August, with the mission of supporting II Corps. On 14 September headquarters of the company and the 1st Storage and Issue Platoon established the main Fifth Army medical supply depot in Florence, and three days later the 2d Storage and Issue Platoon set up an issue point for IV Corps in Pisa. All units were in buildings, the main dump being located in a pharmaceutical plant that the Germans had rendered unfit for anything but storage.[21]

The IV Corps dump moved to a more central location in Lucca on 30 November, but was still too remote from portions of the long corps front to be readily accessible to combat medical units. To compensate for distance, the supply section of the clearing company, 163d Medical Battalion, was enlarged to maintain a forward dump for the corps in the vicinity of Valdibura. The II Corps depot moved on 15 October to Filigare on Highway 65 just below Monghidoro. This dump maintained heavy stocks of intravenous solutions, dressings, blankets, litters, and cots throughout the winter as a safeguard against the possibility that snow might interrupt communication with the Florence depot.

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[21] This section is based on the following documents: (1) Annual Rpts, Surg, Fifth Army, 1944, 1945; (2) Annual Rpts, Surg, II Corps, 1944, 1945; (3) Annual Rpts, Surg, IV Corps, 1944, 1945; (4) Annual Rpts, 12th Med Depot Co, 1944, 1945; (5) Davidson, Med Supply in MTO, pp. 108–13; (6) Unit rpts of Fifth Army med bns and hosps.

The Florence depot received its own stocks by truck from the PBS dump in Leghorn. Little in the way of local procurement was possible, but the repair and maintenance section was active and much equipment was salvaged. The optical and dental sections were also active during the winter months, which were largely devoted to reconditioning both men and equipment.

Professional Services in the Army Area

Medicine and Surgery

Forward Surgery—Front-line surgery in the North Apennines Campaign followed the pattern that had been steadily evolving since operations in Sicily, but with greater pressure than ever before on the surgical staffs. The withdrawal of three evacuation and two field hospitals for use in southern France, together with the loss of half of the 2d Auxiliary Surgical Group, meant that field units supporting II Corps in the northern Apennines were overcrowded during the weeks of heaviest combat, and surgical teams worked without regard to hours. Surgical teams from base hospitals were used to replace in part the teams sent to France, but the nature of their experience precluded their use in forward units. Instead, they were placed in the evacuation hospitals, while teams from the evacuations were detailed to field hospital units.[22]

Experience had shown that to perform effectively under front-line conditions, surgical teams must be able to handle any type of case received. General surgical teams were chosen in preference of those specializing in some particular phase that, by its infrequent occurrence, might limit their usefulness. Base hospital surgeons were apt to be too specialized, but surgeons whose experience had been gained in evacuation hospitals were likely to be possessed of a wider range of skills. Although the loss of surgical teams was thus minimized as much as possible and the high standards of forward surgery were maintained, the output per man was less than it would have been had the 2d Auxiliary Surgical Group been retained in Italy intact.

Another factor tending to increase the burden on front-line surgeons during the North Apennines Campaign was a more liberal policy in the selection of nontransportable cases. Fifth Army studies made earlier in the year indicated that many who died in evacuation hospitals could have been saved by the more prompt attention possible in a hospital closer to the front, and a larger proportion of combat wounds accordingly received initial surgery in the field hospitals. All cases of shock, or those who had been in shock, for example, were sent to the field units, as well as those with wounds with extensive muscle damage.[23] The triage of chest, abdominal, maxillofacial, and head wounds also tended to route a larger proportion of cases to the field hospital units close to the front lines. Shell fragment wounds continued to predominate substantially over all other causative agents combined, but the percentage of wounds from land mines rose somewhat.

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[22] Principal sources for this section are: (1) Annual Rpts, Surg, Fifth Army, 1944, 1945; (2) Rpts of 2d Aux Surg Gp, including rpts of individual teams, 1944 and 1945; (3) Annual Rpt, Med Sec, MTOUSA, 1944; (4) Periodic Rpts, 2d Med Lab, 1944, 1945; (5) ETMD's for Sep 44 through Mar 45.

Penicillin and whole blood were again major factors in the saving of life and limb, blood being used on an expanding scale as a result of studies made during the Rome-Arno Campaign. A distribution section of the 6713th Blood Transfusion Unit was established with the 2d Medical Laboratory in Florence in mid-September, but the blood distributed was still flown from Naples. In February 1945 a bleeding station was set up in Florence to supplement the supply from the Naples blood bank. Approximately 15,500 battle casualties in the last four months of 1944 received close to 10,000 pints of whole blood in corps and army installations.

Fifth Army hospitals were visited by the theater orthopedic consultant, Colonel Hampton, in September and by Colonel Churchill, theater consultant in surgery, in October and November. Lt. Col. (later Col.) Howard E. Snyder, the Fifth Army surgical consultant, spent most of his time in the forward area.

Neuropsychiatry and Rehabilitation—Early in the North Apennines Campaign the forward treatment of psychiatric casualties was extended to include all those having upper gastrointestinal tract symptoms, since experience had shown that 85 percent of such cases showed no significant organic pathology. A gastrointestinal center was set up by the 1st Platoon of the 601st Clearing Company, 161st Medical Battalion, on 23 October 1944 in the vicinity of Cafaggiolo, where it was adjacent to the neuropsychiatric center operated by the 2d Platoon of the same company. Maj. (later Lt. Col.) James A. Halstead of the 6th General Hospital was made chief of the gastrointestinal service, continuing in that capacity when the function was shifted to the 15th Field Hospital in January 1945. The center was the first organization of its type to be established in an American field army.[24]

All cases diagnosed as gastrointestinal at the clearing stations were sent to the center and others were referred from the evacuation hospitals. No case of this type left the army area without passing through the gastrointestinal center where those of psychosomatic origin were identified and treated as such. During the 6 months of its existence, 442 patients were admitted to the center, of whom 74 percent were returned to full duty, 11 percent to limited duty, and only 15 percent were evacuated to base hospitals. Of the total, 286 cases were diagnosed as psychogenic dyspepsia showing definite neurosis without evidence of organic disease. Another 78 cases showed neither organic disease nor positive evidence of neurosis. There were 22 cases of peptic ulcer, 4 of chronic gastritis, and 20 of acute gastritis. Thirty-two cases were rediagnosed as hepatitis without jaundice.

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[23] See The Board for the Study of the Severely Wounded, North African-Mediterranean Theater of Operations, *The Physiologic Effects of Wounds,* "Medical Department, United States Army," subseries Surgery in World War II (Washington, 1952). This volume contains the complete report of a medical board, appointed 1 September 1944 by the Surgeon, NATOUSA, "to study the treatment of the severely wounded." The board was particularly interested in the effects and control of wound shock.

[24] Principal sources for this section are: (1) Annual Rpts Surg, Fifth Army, 1944, 1945; (2) Annual Rpt, Surg, II Corps, 1944; (3) Annual Rpts, 161st Med Bn, 1944, 1945; (4) Annual Rpt, 15th Field Hosp, 1945; (5) Periodic rpts of surgs and organic med bns of 34th, 85th, 88th, 91st, 92d, 1st Armored, and 10th Mountain Divs; (6) ETMD's, Sep 44–Mar 45; (7) Maj. James A. Halstead and Capt. Paul Scott Hansen, "The Management of Intestinal Diseases in the Army Area," Medical Bulletin, *Mediterranean Theater of Operations* (May 1945); (8) Maj. James A. Halstead, "The Management of Patients with Gastric Complaints in the Army Area," Medical Bulletin, *Mediterranean Theater of Operations* (June 1945); (9) Hanson, comp. ed., "Combat Psychiatry," Bulletin *U.S. Army Medical Department,* Suppl. Number (November 1949).

The average period of hospitalization in the gastrointestinal center was 9.1 days, compared with 21 days for similar cases in base hospitals. Moreover, only 55 percent of those treated in base hospitals returned to combat duty, and those who did return lost an additional 14 days in the replacement system.

Taken as a whole, the treatment of neuropsychiatric casualties in the army area showed gratifying improvements during the months of active combat, despite the large number of such cases in September and October. The rehabilitation and training centers established in each of the combat divisions in the late summer proved to be a major factor in promoting the prompt return to duty of hundreds of men who might otherwise have gone too far to be reclaimed for combat. The 85th Division experimentally carried the program a step further when the 337th Infantry regiment set up its own training and rehabilitation center. It was notable that the 337th had less than half the psychiatric casualty rate of the other two regiments for the same period.

In December 1944, more than 90 percent of all Fifth Army psychiatric casualties were returned to duty, as compared with only 26 percent at the beginning of the year. (*Table 31*)

Diseases of Special Interest—The major disease problem of Fifth Army during the months of the North Apennines Campaign was infectious hepatitis, which followed the pattern of the previous fall but was more widespread. The disease reached its peak in December 1944, whereas October had been the month of highest incidence in 1943. The maximum rate per 1,000 per annum was 211 for the week ending 15 December 1944, compared with a high of 121 for the second week of October 1943. The sharp rise in hepatitis cases began late in October 1944, leveled off in November, rose sharply again in December, then gradually declined to what may be termed a "normal" rate in March.[25]

Again the disease appeared most frequently among combat troops, and again revealed an amorphous relationship to intestinal diseases, the curve for hepatitis following by about a month the curve for intestinal infections. In the second winter, however, hepatitis appeared most frequently among new troops in contrast to the experience of 1943, which showed a higher incidence among veterans. Evidence tended to indicate both the intestinal and respiratory tracts as possible sources for infection, but remained inconclusive as to the actual mode of transmission.

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[25] Principal sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944; (2) Annual Rpts, Surg, Fifth Army, 1944, 1945; (3) ETMD's for Sep 44 through Apr 45; (4) Whayne and DeBakey, *Cold Injury, Ground Type,* ch. VI. See also pp. 261–62, above.

TABLE 31—DISPOSITION OF NEUROPSYCHIATRIC CASES, FIFTH ARMY
SEPTEMBER 1944–MARCH 1945

Month and Year	Returned to Duty						Evacuated out of Army Area		Total Dispositions
	From Divisions		Class A From Hospitals[a]		Class B from Hospitals[b]				
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	
1944									
September......	722	47.4	293	19.2	151	9.9	359	23.5	1,525
October........	617	28.7	705	32.8	450	20.9	377	17.6	2,149
November......	243	24.3	336	33.7	291	29.2	128	12.8	998
December......	228	25.2	256	28.3	348	38.4	74	8.2	906
1945									
January........	186	26.5	227	32.2	104	14.8	185	26.4	702
February.......	249	33.2	245	32.7	33	4.4	223	29.7	750
March.........	338	41.8	212	26.2	189	23.4	70	8.6	809

[a] Full duty.
[b] Limited assignment.

Source: Annual Rpt, Surg, Fifth Army, 1945.

Atypical pneumonia struck hard at certain units that had only physical location in common, rising from 39 cases in November to 415 in March 1945. An outbreak of typhoid fever in the 349th Infantry Regiment of the 88th Division in November was quickly brought under control and kept from spreading.

Trench foot, which had been one of the greatest wasters of manpower in the winter of 1943, was again a factor but was far less destructive, thanks to prompt preventive measures. The condition first appeared in October. Shoe pacs were issued in the middle of November, together with heavy wool socks, but the pacs were not always properly fitted and the men were not always told they were to wear two pairs of socks. Instructions were clarified by December, and dry socks were issued with rations. Although weather conditions were more severe and the strength of the affected divisions greater, there were only 1,572 cases of trench foot between October 1944 and April 1945, compared with 5,752 for the comparable period a year earlier. Only 1.7 percent of the divisional troops were afflicted, as against 7 percent in the winter of 1943–44.

The winter months of 1944–45 also showed a lowered incidence of venereal disease in Fifth Army compared with the corresponding months of 1943–44, owing in part to less opportunity for exposure but also in part to improved preventive discipline.

Dental Service

The mobility of the Fifth Army dental service was further increased in the course of the North Apennines Campaign, under the direction of Col. Thomas F. Davis, who became Fifth Army dental surgeon late in September 1944. In addition to the army dental clinic operated by the 2d Platoon of the 602d Clearing Company, 162d Medical Battalion, and sited with the venereal disease hospital in Florence, both corps maintained prosthetic and operative clinics of their own. The II Corps clinic, administered by the 54th Medical Battalion, was at Traversa, while another clinic operated by the 33d Field Hospital, was sited with the corps supply depot just below Monghidoro. The IV Corps clinic, staffed jointly by the 163d Medical Battalion and the 32d Field Hospital, was located at Valdibura. Two dental laboratory trucks and two dental operating trucks assigned to the 12th Medical Depot Company were placed in operation in November. Two additional operating trucks were assigned to the 2d Auxiliary Surgical Group, and were operated in the forward areas by teams of that unit.[26]

Late in 1944 the divisional dental service of Fifth Army was reorganized to bring the regimental and other dental officers of each division under more direct administrative control of the division dental surgeon and permit concentration of skills where they were most needed. At the same time the construction of mobile dental dispensaries on 1-ton trailer chassis was authorized on the basis of five for each infantry division and seven for the armored division. Thirty-four of these trailer dispensaries were in operation by May 1945.

The dental service of the 1st Brazilian Division was organized along much the same lines as that of comparable U.S. units. There were two dental officers with each infantry regiment, one with the division artillery, one with special troops, and one or two with the medical battalion. Dental officers also served with the Brazilian medical staffs attached to U.S. hospitals. Arrangements were made in November by the theater dental surgeon, Colonel Tingay, to supply U.S. equipment wherever the Brazilian equipment was below standard.[27]

The ratio of dental officers to Fifth Army strength remained fairly constant for the 7 months of the North Apennines Campaign. In September 1944 there was 1 dental officer for every 902 army troops. The ratio improved to 1:828 in November, but fell again to 1:937 for March 1945. The number of dental officers in Fifth Army rose from 157 in September 1944 to 184 in March 1945.

Dental service rendered by these officers and their enlisted technicians to Fifth Army troops during the 7-month period is summarized in Table 32.

Veterinary Service

In the North Apennines Campaign, the combat divisions did not maintain their own provisional pack trains, as they had during the mountain fighting in southern Italy. By September 1944 animal transportation was exclusively by Italian pack trains, which were attached

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[26] Principal sources for this section are: (1) Annual Rpts, Surg, Fifth Army, 1944, 1945; (2) Annual Rpt, Med Sec, MTOUSA 1944; (3) Annual Rpts, Surg, II Corps, 1944, 1945; (4) Annual Rpt, Surg, IV Corps, 1944; (5) MS, Dental History, Mediterranean Theater of Operations; (6) Unit rpts of div surgs and med installations in Fifth Army during the period 1 Sep 44–31 Mar 45.

[27] Dental Inspection, by Col Tingay, 4 Nov 44.

TABLE 32—DENTAL SERVICE IN FIFTH ARMY, SEPTEMBER 1944—MARCH 1945

	September	October	November	December	January	Feburary	March
Total operations.	41,067	51,297	48,751	55,863	60,313	60,410	69,368
Admissions	11,985	12,198	14,150	15,119	16,677	15,829	17,750
Sittings	19,521	20,413	23,916	25,161	27,509	25,690	28,825
Restorations	14,121	14,441	17,672	21,595	24,983	25,258	27,366
New dentures	818	870	831	886	989	973	1,164
Dentures repaired	294	708	363	441	374	337	490
Teeth extracted	2,902	3,006	3,074	3,492	3,391	3,402	3,581
Teeth replaced	5,879	6,266	6,394	6,859	7,236	6,017	8,691

Source: Annual Rpt, Surg, Fifth Army, 1945.

to the combat units as circumstances required. Ten pack mule companies operated with Fifth Army during the fall and winter of 1944, and five more were organized in February 1945.[28]

Animal casualties from the pack mule companies went to one of the four Italian-staffed veterinary hospitals supporting Fifth Army. The 110th Veterinary Evacuation was at Vaglia, about twenty miles north of Florence on Highway 65, from 14 September to 17 October, and for the remainder of the period was sited at Pietramala, near the 8th Evacuation Hospital. The 130th Veterinary Evacuation opened at Cafaggiolo on 16 September where it remained, sharing the location with the 212th Veterinary Station Hospital between 2 October and 6 January. The 212th moved to Lucca on 8 January to support the animal units of IV Corps. The 211th Veterinary Evacuation was inactive during most of the winter, opening at Pontepetri in the IV Corps area on 24 February 1945.

It was the general consensus of American veterinary officers that all of these Italian units were poorly equipped and inadequately staffed. They were redesignated early in 1945 as U.S.-Italian units, and were thereafter supplied and equipped from U.S. sources and operated under closer supervision. The three veterinary evacuation hospitals had Table of Organization capacities of 150 stalls and the station hospital had a capacity of 250, but staff and site limitations seldom permitted full operation. The shortcomings of the Italian veterinary hospitals were felt most acutely during the period from late September to the end of October, when forward positions could be supplied only by mules, and animal casualties were high. Aggregate animal strength of the 10 pack trains serving Fifth Army at this time was less than 3,000, with casualties be-

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[28] Principal sources for this section are: (1) Annual Rpts, Surg, Fifth Army, 1944, 1945; (2) Vet Inspection Rpts, Sep 44, Mar 45; (3) Annual Rpt, Med Sec, MTOUSA, 1944; (4) Annual Rpt, Surg, 10th Mountain Div, 1945. See also, Miller, *United States Army Veterinary Service in World War II*, ch. XXII.

Treating a Wounded Mule of an Italian Pack Train

tween 9 September and the end of the year 1,110 killed and 765 wounded.

Evacuation of sick and wounded animals, both from pack trains and from veterinary hospitals, was by truck, but until late December no vehicles were available except on loan from service units. At that time Colonel Pickering, Fifth Army veterinarian, secured authorization to supply both pack companies and veterinary hospitals with reconditioned U.S. or captured enemy trucks, and most of the units were so supplied by the end of the year. Replacement animals were received through the 6742d Quartermaster Remount Depot.

To achieve better administrative control, the Italian pack mule companies were grouped early in 1945 into 5 battalions and brought under the supervision of the newly activated 2695th Technical Supervision Regiment. Three American veterinary officers were assigned to this organization, one to each of 3 pack mule battalions. The other 2 battalions were periodically inspected by these officers.

The relatively large veterinary staff of the 10th Mountain Division—22 officers and 182 enlisted men—had little to do in their first three months in Italy, since none of the division's animals reached the theater before spring.

In addition to horses and mules, and the pigeons that were a normal part of the Signal Corps organization, Fifth Army veterinarians were called upon to care for 125 scout dogs that reached the front during the winter.

No unusual problems were encountered by the food inspection units operating with Fifth Army.

CHAPTER XII

Advance to the Alps

If the second winter in Italy was only an exaggerated repetition of the first, the second spring was a new and exhilarating experience. The months of inching progress through mud and mountains were forgotten when in April 1945 the U.S. Fifth and British Eighth Armies erupted into the Po Valley and brought the war in Italy to a decisive end in three weeks. Both for the combat forces and for the medical units supporting them in the field, the campaign was a triumph of planning and preparation.

Preparations for the Final Drive

Planning and Regrouping

While the ranks were being filled, stores of ammunition accumulated, and equipment refurbished or replaced, plans were being drawn up for the last offensive of the Italian campaign. Clark's strategy as 15th Army Group commander did not differ essentially from that employed by Field Marshal Alexander in the assault on the Gothic Line, save that Fifth Army, now at full strength, rather than Eighth Army, which had been weakened by the withdrawal of four Canadian and British divisions, was to make the main effort.[1]

The attack was to be staggered along the entire Allied front. The 92d Division, under direct army control, was to lead off on 5 April with an advance up the Ligurian coast toward Massa and La Spezia. Eighth Army, already out of the mountains, was to open its drive four days later, its first objective being to secure a crossing of the Santerno River east of Bologna. IV Corps was to follow after a 3-day interval with a drive west of Highway 64, and II Corps was to launch its attack along the axis of Highway 65 when IV Corps had pulled abreast of the more advanced II Corps positions. The two armies were to converge at the Po River, trapping as many enemy forces as possible south of the river. In the second phase of the campaign, both armies were to cross the Po and exploit to the Adige River, which runs southeastward through Verona to the Adriatic just south of Venice. In the final phase, Fifth Army was to block the Brenner Pass north of Verona and clear northwestern Italy to the Swiss and French borders, while Eighth Army was to swing eastward to the Austrian and Yugoslav frontiers.

As Fifth Army moved into position, the 92d Division, on the left flank, included in addition to its own three regiments the battle-tested 442d Regimental

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[1] Principal sources for this section are: (1) *Fifth Army History*, pt. IX, *Race to the Alps* (Washington [1947]); (2) Clark, *Calculated Risk*, pp. 426–29; (3) Truscott, *Command Missions*, pp. 479–83; (4) Craven and Cate, eds., *Europe: ARGUMENT to V–E Day* pp. 482–89.

Combat Team, which had just returned from France, and the 473d RCT of converted antiaircraft troops that had been fighting as infantry since August 1944. The 365th and 371st regiments, which had been weakened by the transfer of selected personnel to the 370th, were to screen the front for the attack, then be withdrawn from the division and stationed in the inactive sector west of Mt. Belvedere under IV Corps control. IV Corps lined up with the Brazilian Expeditionary Force on the left, the 10th Mountain Division in the center in the vicinity of Castel d'Aiano, and the 1st Armored on the right along Highway 64 south of Vergato. In the II Corps sector, extending east from the Reno River, the 6th South African Armoured and the 88th Infantry Divisions were on the left between Highways 64 and 65, the 91st was astride Highway 65, the 34th Division was east of the highway, and the Legnano Group on the extreme right, in contact with 13 Corps on the left flank of Eighth Army. The 85th Division was in army reserve. All units were overstrength for the drive, with almost 30,000 additional officers and men available in replacement depots.

When the diversionary attack of the 92d Division in the west and the Eighth Army drive in the east had engaged as many troops as the German command was willing to commit against them, the 10th Mountain Division was to launch the IV Corps assault driving north through the remaining mountain ridges to cut Highway 9 west of Bologna. The Brazilians and the 365th and 371st regiments were to protect the left flank and follow up any enemy withdrawals, while the 1st Armored was to seize Vergato and advance down Highway 64.

The II Corps attack was in effect to be a renewal of the October drive, with all four divisions abreast and the Legnano Group in a defensive role on the right flank. When the important road junction of Praduro on Highway 64 had been reached, the 85th Division was to pass through the 1st Armored, leaving the latter unit and the 6th South African Armoured, which would be pinched out by the 85th and 88th Divisions, available as a mobile striking force to exploit the breakthrough onto the plain.

Medical Preparations

Although Fifth Army's strength for the final drive was greater by 100,000 men than it had been when the Gothic Line was broken—almost 270,000 on 1 April 1945 compared with 170,000 six months earlier—the resources in men and equipment available to General Martin, Fifth Army surgeon, were only slightly increased over the inadequate facilities with which he had supported the North Apennines Campaign. The 400-bed 170th Evacuation Hospital had been added in November 1944, and the 15th Field Hospital in January 1945. Just before the launching of the spring offensive one additional 400-bed evacuation—the 171st, converted like its sister unit from a station hospital—was acquired.[2] That was all. There were no additional medical battalions at corps or army level, no new supply units, no

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[2] See p. 439, above. The 171st Evacuation Hospital was converted from the 250-bed 54th Station Hospital, which had moved from North Africa to Naples in January 1945, with some additional personnel drawn from the 57th Station Hospital, which was reduced from 250 to 150 beds at about the same time. See Annual Rpt, 171st Evac Hosp, 1945, and ETMD for Mar 45.

Generals Clark and Truscott *at the time General Truscott took command of the Fifth Army.*

more supporting ambulance companies; and the increase in beds was less than enough even to keep pace with the increase in troop strength.[3]

Of the new combat formations acquired by Fifth Army since the stabilization of the lines at the end of October 1944, only the Legnano Group had hospital facilities of its own—four 200-bed field units provided through the Military Mission to the Italian Army, a division of the Allied Control Commission. The 6th South African Armoured Division was also independent of Fifth Army in this respect. To provide hospitalization for the remaining 8 combat divisions, 2 separate regiments, and combat service troops, General Martin had at his disposal 3 field hospitals, 4 400-bed evacuation hospitals, 4 750-bed evacuations, and a convalescent hospital.

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[3] Principal sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1945; (2) Annual Rpt, Surg, II Corps, 1945; (3) Unit rpts of div surgs, med bns, hosps, and other Fifth Army med installations.

What it lacked in facilities Fifth Army was thus forced to make up in mobility and efficiency of operation. During March medical units received new equipment, including a total of 90 ambulances and 15 2½-ton trucks, to replace worn-out vehicles. A move to fill personnel vacancies with limited-service men was successfully resisted, on the ground that all personnel would be subjected to severe physical strain, and basic infantrymen were trained instead as medical replacements.

By early April all medical units had been streamlined for rapid movement. All equipment beyond the bare essentials for operation was turned in, and hospitals began reducing their patient censuses to permit closing on a few hours' notice. No hospital was to move until the combat troops jumped off, to avoid any possibility of giving away plans to the enemy, but once the mountains were passed, it was imperative that as many beds as possible be shuttled into the Po Valley to eliminate long and difficult ambulance runs over highways that would be clogged with military traffic. It was also imperative that no hospital be closed for longer than the absolute minimum time necessary for movement to a new location.

In the hope of speeding up the evacuation process, experiments were conducted early in April with small planes that could take off, if necessary, from improvised runways. Several patients were flown successfully in L–5's from the 8th Evacuation Hospital at Pietramala to Florence, but the scheme was abandoned as impractical for use in the coming campaign. Space permitted carrying only one patient at a time, without medical attendance, which would greatly restrict the scope of the operation. The unpredictability of the weather at that season was another limiting factor.

In planning medical support for the Po Valley Campaign, there was no alternative to ambulance evacuation, at least during the early stages of the action. Neither could use of the battered and rutted Highways 64 and 65 in the central sector be avoided. Highway 1, which would be the axis of evacuation for the 92d Division along the coast, had suffered little and was in excellent condition. From the II and IV Corps fronts, evacuation by air was to begin as quickly as the Bologna field could be repaired, estimated as five days after the capture of the city.

For the 92d Division, isolated as its front was from the rest of the Fifth Army area, a complete system of medical support had to be provided that would not only take care of all the medical needs of the division but also could be rapidly expanded should the coastal drive develop into a major operation. As one element of this plan, a bleeding section was set up in Pisa by the 6713th Blood Transfusion Unit.

The Po Valley Campaign

Military Operations

During February, March, and the early days of April 1945 the Mediterranean Allied Tactical Air Force pounded German communications in northern Italy with increasing violence. Favorite targets were the bridges that kept appearing with antlike persistence along the Po, cable crossings, ferry terminals, rail lines, and truck and wagon convoys on the roads. The bombers gave way on 14 April to an umbrella of fighters that would cover the jump-off of IV Corps.[4]

The flanks by this date were already heavily engaged. The 92d Division opened the attack according to plan on 5 April, with the 370th RCT on the coastal plain and the 442d pushing through the mountains that rose steeply a few miles to the east. The assignment was not an easy one. The mountains in this area, known as the Apuan Alps, are characterized by sheer rock cliffs, barren peaks, and deep gorges, while the narrow coastal plain is cut by numerous streams and canals. The plain, moreover, was heavily mined and both axes of advance would soon be within range of the big guns at La Spezia, which could drop their deadly shells as far south as Massa. Before La Spezia itself could be reached, the attacking forces would have to break through heavily fortified positions that took every advantage of the natural barriers offered by the terrain.

By the end of the first day the 442d was approaching the high ground overlooking Massa, but the 370th encountered intense enemy fire and withdrew in the face of strong counterattacks. When the regiment was unable to regroup the next day because of excessive losses in stragglers, it was relieved by the 473d Combat Team, which was brought up from static positions in the Serchio Valley. The 473d took Massa on 10 April and Carrara the next day, while the 442d outflanked both towns against strong opposition in bitter mountain fighting. Both regiments were now up against the German fortified line and both were under fire from the coastal guns, but now had positions from which their own field pieces could reply.

Eighth Army attacked on 9 April, was across the Santerno River in two days of hard fighting, and by 13 April was beyond the Sillaro on the road to Bologna.

The launching of the main drive by IV Corps was delayed for 48 hours by weather conditions that prevented the air cover General Truscott deemed essential. On the morning of 14 April, however, the corps jumped off behind intensive air and artillery preparation. On that day the 10th Mountain Division seized and held a series of peaks west of Highway 64; the Brazilians took Montese; and the 1st Armored entered the outskirts of Vergato. All units continued to advance on 15 April. Just before midnight the 88th and 6th South African Armoured Divisions of II Corps joined the battle, followed early on 16 April by the 91st and 34th Divisions. On 17 and 18 April the 85th Division relieved the 1st Armored north of Vergato, the latter division shifting to more favorable terrain along the Panaro River on the left of the 10th Mountain. The intercorps boundary was shifted to the west on 19 April as the whole German front began to crumble. The 85th Division took

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[4] Principal sources for this section are: (1) *Fifth Army History*, pt. IX; (2) Rpt of Opns, IV Corps, Apr, May 45; (3) Rpt of Opns, II Corps, 1 Apr–2 May 45; (4) Hist, 92d Div, Apr, May 45; (5) Rpt of Opns, 473d Regt, Apr 45; (6) Narrative of Events, 442d Regt, Apr, May 45; (7) Clark, *Calculated Risk;* (8) Truscott, *Command Missions;* (9) Howe, *1st Armored Division*, pp. 396–432; (10) Schultz, *85th Division*, pp. 197–230; (11) Delaney, *Blue Devils*, pp. 186–222; (12) Robbins, *91st Infantry Division*, pp. 262–332; (13) Goodman, *Fragment of Victory*, 1952) pp. 121–77; (14) Lockwood, ed., *Mountaineers* pp. 26–58; (15) Alexander, *Italian Campaign* pp. 32–49; (16) Starr, ed., *From Salerno to the Alps*, pp. 387–441.

Casalecchio, where the Reno River enters the plain on 20 April, while forward elements of the 10th Mountain cut Highway 9 west of Bologna and II Corps broke through the last of the high ground in its path. Bologna fell on 21 April, the 34th Division entering the city from the south and elements of the Polish Corps of the Eighth Army from the east.

The main advance had already swept beyond Bologna, with both armies racing to reach the Po before the enemy could withdraw his disorganized forces across the river. The 10th Mountain Division reached the south bank of the Po at San Benedetto west of Ostiglia the night of 22 April, crossing the river in assault boats the next afternoon in the face of heavy enemy fire. By the 24th the 85th Division was also across the river, the 88th and 91st were crossing, and the two armored divisions were only awaiting the placement of bridges by the engineers. The 34th Division, reassigned to IV Corps, was sweeping west along Highway 9, already beyond Parma, while the Brazilian Expeditionary Force kept pace through the foothills south of the highway. Verona, gateway to the Brenner Pass, fell to the 88th Division on 25 April, and the 10th Mountain took Villafranca airport southwest of that city the same day.

In the final days of the war in Italy, Fifth Army fanned out toward the borders to cut off all avenues of escape. Resistance was sometimes strong, sometimes nonexistent, but always confined to pockets where isolated remnants of the once proud Wehrmacht tried to break out of the trap that was swiftly closing on all sides. The 91st Division pushed east through Vicenza to Treviso where the Eighth Army sector began. The 88th swung northeast from Verona to outflank Bolzano, and the 10th Mountain Division fought its way to the head of Lake Garda. The 1st Armored sent flying columns to the Swiss frontier at Lake Como, and west to Milan.

The 92d Division, meanwhile, after a week of bitter fighting, broke through the mountain defenses of La Spezia, while Italian partisans seized the city itself. The 473d Infantry entered La Spezia on 23 April, and four days later entered Genoa more than a hundred miles up the coast. From there patrols moved west to the French border. The 442d, after driving inland from the La Spezia area, made contact with IV Corps near Pavia and sent patrols west to Turin.

The first organized surrender came on 29 April when the *148th Grenadier* and *Italia Bersiglieri Divisions* surrendered to Maj. Gen. Joao Mascarenhas de Morais, commanding the Brazilian Expeditionary Force. At 1400 on 2 May 1945 all German forces in Italy were surrendered unconditionally to General Clark, and the Italian campaign was over. The number of prisoners taken was more than 250,000, bringing the total for the Italian campaign to over half a million.

Medical Support in the Field

Field medical support of Fifth Army during the final drive in Italy was characterized by an initial period of heavy casualties and slow movement, followed by rapid expansion over hundreds of miles with enemy casualties exceeding our own. In the last few days of combat medical units were not only cut off from army and corps surgeons, they were also frequently out of communication with their own headquarters. The use of captured vehicles, medical installations, and supplies was both a general practice and a necessary expedient.[5]

The 92d Division Front—Perhaps the most difficult task was that assigned to the 317th Medical Battalion, organic to the 92d Division, which during the greater part of the drive was required to support five regimental combat teams on three fronts. Casualties suffered by the augmented 92d Division, even though two of its five regiments had little contact with the enemy, were exceeded only by those of the 10th Mountain Division on the IV Corps front. (*See Table 33.*) One collecting company and one platoon of the clearing company remained with the defensive formations in the Serchio Valley until 25 April, when that sector was closed out. The other two collecting companies, sometimes operating in sections, supported the main drive of the 442d and 473d RCT's, with one platoon of the clearing company backing up both. Neither the terrain nor the location of enemy long-range guns permitted the attached platoon of the 32d Field Hospital to move up from its Viareggio site in time to give close support during the period of severe fighting, but the relative slowness of the advance to La Spezia kept the hospital within usable distance.

By 20 April communications with the 92d Division had become so tenuous that General Martin designated the division surgeon, Lt. Col. Eldon L. Bolton, to act as his deputy in the coastal sector, with full responsibility for the medical service there.

La Spezia fell on 23 April, and two days later medical units from the Serchio Valley rejoined the 317th Medical Battalion in support of combat elements now fanning out in two directions. Forward hospital facilities were urgently needed, but the Viareggio field unit, with no army evacuation hospital in the vicinity, was unable to move on short notice. To redeem the situation, General Martin sent a unit of the 15th Field Hospital, which was still in bivouac north of Florence, and a platoon of the 601st Clearing Company, 161st Medical Battalion, to the 92d Division front. A 250-bed hospital was set up on 25 April near La Spezia, but the combat units were already far ahead. After three days of operation with only a handful of patients, the clearing platoon moved on 29 April to Genoa, where it was joined the following day by the field hospital unit.

By that date one platoon of the 92d Division clearing station was northwest of Genoa, and the Viareggio unit of the 32d Field Hospital was on its way to Alessandria, on the road to Turin. The field hospital was in the vicinity of Milan en route when hostilities ceased.

Medical Support of IV Corps—First of the IV Corps medical units to go into

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[5] This section is based primarily on the following documents: (1) Annual Rpt, Surg, Fifth Army, 1945; (2) Annual Rpt, Surg, II Corps, 1945; (3) Opns Rpt, IV Corps, Apr, May 45; (4) Opns Rpt, II Corps, 1 Apr–2 May 45; (5) Hist, 92d Div, Apr, May 45; (6) Annual Rpt, Surg, 10th Mountain Div, 1945; (7) Annual Rpt, Surg, 91st Div, 1 Jun–12 Aug 45; (8) Hist, 47th Armored Med Bn, Apr, May 45; (9) Unit Hists, 10th Mountain Med Bn, Apr, May 45; (10) Hist Rcd, 109th Med Bn, Apr, May 45; (11) Opns Rpts, 310th Med Bn, Apr, May 45; (12) Hist, 313th Med Bn, Apr, May 45; (13) Unit Hist, 316th Med Bn, Apr, May 45; (14) Hist Data, Med Bn 92d Inf Div, Apr, May 45; (15) Annual Rpts, 1945, of 54th, 161st, 162d, 163d Med Bns; (16) Annual Rpts, 1945, of 15th, 32d, 33d, Field Hosps.

100TH BATTALION AIDMEN *approach wounded on "Ohio Ridge."*

action was the 10th Mountain Medical Battalion, whose collecting companies moved out with the mountain infantry on the morning of 14 April. Casualties were heavy from the start, with jeeps and ambulances inadequate to clear the aid stations the first two days. Trucks were used for walking wounded, and one collecting company borrowed additional vehicles from the service company of the infantry regiment it supported. Even when vehicles were available, there were delays in moving casualties to collecting and clearing stations. All roads were operating one way, traffic moving toward the front. Ambulances had to wait, sometimes as long as an hour and a half, to use the roads in the other direction.

By midnight of 14 April the clearing stations of the 10th Mountain Medical Battalion had admitted 415 patients, including injury and illness. The total rose to 427 the next day, then fell off to 327 on 16 April, and 210 on the 17th. The figures are notable only because they were the highest in Fifth Army, in keeping with the spearhead role of the division. (*See Table 33.*) Admissions remained in the vicinity of 200 for several days, dropping to 132 on 22 April and rising to 254 the following day, when the leading elements of the 10th Mountain crossed the Po River and won a bridgehead on the north shore against heavy opposition. Casualties were negligible thereafter except for the last two days of April, when there was hard fighting along Lake Garda.

The experience of the 10th Mountain Medical Battalion was typical of IV Corps medical units generally. Casualties were heavy for two or three days. Advances were minimal, and clearing stations stayed where they were. Beginning about 19 April, when the descent into the Po Valley began, movements became increasingly frequent and confusion grew. Clearing stations moved daily, collecting stations sometimes twice a day. Collecting companies were so close behind the retreating enemy by 20 April that they passed through still burning villages and ran the gantlet of artillery and sniper fire. Indeed, as the rout developed medical units were not infrequently ahead of the retreat. Armed Germans surrendered with increasing frequency to unarmed medics, and by 25 April German ambulances were bringing German wounded to U.S. installations.

Distances between stations lengthened after the Po was crossed and the race for the frontiers began. On 24 April a clearing platoon and collecting company of the 10th Mountain Medical Battalion

MEDICS OF 10TH MOUNTAIN DIVISION EVACUATING WOUNDED IN A JEEP *while tanks wait to use the one-lane road, April 1945.*

accompanied a task force on a spectacular 70-mile dash from the Po to Lake Garda, where for two days the clearing station constituted the left flank of the division. On 28 April a company of the 47th Armored Medical Battalion traveled 62 miles; and the following day a collecting company of the 109th Medical Battalion, organic to the 34th Division, covered 170 miles in a roundabout journey from the vicinity of Fidenza to the outskirts of Milan. A 30-mile jump was average.

From 20 April on, medical units were periodically out of touch with their own headquarters, sometimes for days at a stretch. Fortunately, casualties by this time were light, and could generally be held until clearing stations or field hospitals were located. Prisoner of war patients, who outnumbered Allied casualties, were usually sent to captured German hospitals in captured vehicles.

It was quickly obvious that field hospital platoons could not possibly keep pace with division clearing stations and still perform surgery or hold nontransportable casualties. The corps surgeon tried to keep these units as available as possible in terms of transportation, but inevitably they fell behind, where their functions became more nearly those of evacuation than of forward surgical hospitals.

Of the two platoons of the 32d Field

Hospital attached to IV Corps, the 2d Platoon followed the westward push of the 34th Division along Highway 9 and the BEF south of that route. Moving on 20 April from Valdibura, where it had spent the winter, to Lama about ten miles south of Bologna on Highway 64, the unit was the most forward Fifth Army hospital, but it was already too far behind. At Castelfranco, some fifteen miles west of Bologna on Highway 9, there was no such complaint. The town was being shelled when the hospital arrived on 22 April. Four additional surgical teams were called in, and for seventy-two hours four operating tables were in constant use. On 28 April the unit moved west once more on Highway 9. Parma was passed, but Piacenza was still held by the enemy, so the unit set up in buildings of a civil hospital in Fidenza. Two hours later the platoon was ordered to close and return to Parma, where its own functions could be combined with administration of a large German hospital captured there.

The 3d Platoon of the 32d Field opened in Vergato on 18 April, moved 70 miles on 24 April to a bivouac area in the vicinity of the corps Po crossings, and opened in Mantova two days later. On 1 May the unit moved to the suburbs of Milan. In the final stages of the campaign, sections of the 615th Clearing Company, 163d Medical Battalion, accompanied the field hospital units to care for overflow and to provide holding facilities to enable the hospitals to move forward.

Late in the campaign, on 29–30 April, the 3d Platoon of the 15th Field Hospital was attached to IV Corps and set up in the vicinity of Modena, but aside from receiving the patients of an evacuation hospital about to move, the unit had little to do. There were three other field hospital units and one evacuation hospital closer to the front at that time.

Evacuation of aid and collecting stations in the Po Valley was by ambulance, jeep, truck, and captured vehicles of all kinds. In this flat, well-traveled country, there were no backbreaking litter carries. The extra litter bearers attached at the start of the drive were released when the plains were reached, and most of the regular bearers were sent back for rest. Until clearing stations crossed the Po, boats and Dukws as well as ponton bridges were used for evacuation. On Lake Garda boats were used extensively, partly to bypass stretches of highway blocked by the destruction of tunnels, partly because elements of the 10th Mountain Division were operating on the west side of the lake and casualties could not be reached in any other way.

Medical Support of II Corps—The II Corps medical service did not differ in any essential from that of IV Corps. Casualties in all divisions were heavy for the first three or four days. After debouchment into the Po Valley, casualties declined sharply while distances covered and speed of movement increased.

The clearing station of the 313th Medical Battalion, serving the 88th Division, for example, was in the vicinity of Loiano on Highway 65 when the drive started. The station moved over to Vergato on 19 April when the intercorps boundary was shifted, but most of its patients there were from the 10th Mountain Division, whose clearing station was temporarily out of contact. The clearing station of the 88th moved to Lama on

91st Division Medics at Pianoro, April 1945

20 April, and on the 22d moved up to San Giovanni, some distance beyond the site originally selected. The following day found the station at Mirandola, and on the 26th it was beyond the Po. A series of rapid moves on the last three days of the month brought the station successively to Lonigo, Vicenza, and Bassano, while the division it supported probed into the Alps. The clearing station of the 91st Division—316th Medical Battalion—was in Praduro at the foot of the Apennines on 21 April, but daily moves thereafter brought the unit across the Po and Adige Rivers and east to Treviso, where the Eighth Army zone began. Battle casualties of the 91st Division were less than half those suffered in a comparable time period against the Gothic Line in September 1944.

The medical service of the 34th Division followed a similar pattern before its transfer to the IV Corps at Bologna.

In addition to the divisional medical units, the 383d Clearing Company, 54th Medical Battalion, operated a collecting station for corps troops during the first hectic days in the Po Valley. Elements of the 54th also performed holding chores toward the end of the period to enable the field hospital platoons to move forward.

TABLE 33—WOUNDED IN ACTION IN THE PO VALLEY CAMPAIGN, FIFTH ARMY
1 APRIL—15 MAY 1945

Formation	April 1–15	April 16–30	May 1–15	Total
Total	1,943	3,775	76	5,794
1st Armored Division	56	370	0	426
10th Mountain Division	803	944	7	1,754
34th Infantry Division	32	316	1	349
85th Infantry Division	4	133	9	146
88th Infantry Division	10	751	48	809
91st Infantry Division	36	716	4	756
92d Infantry Division	1,002	545	7	1,554
Organic regiments	358	108	5	471
Attached regiments	644	437	2	1,083

Source: (1) Compilation by Fifth Army Casualty Section. (2) Theater ETMD Rpt for Jul 45. Totals for the 92d Division are from the ETMD. Figures for the attached regiments—the 442d and 473d—are calculated. Wounded in action figures for the 442d and 473d Regiments given by Goodman, *Fragment of Victory,* page 217, are respectively 513 and 571 for the period 5 April–2 May inclusive, or 1,084 in all, compared with 1,083 arrived at by calculation. Since there was no combat action prior to 5 April or after 2 May the time periods may be taken as comparable for purposes of recording wounded in action.

One of these, the 1st Platoon of the 33d Field Hospital, found itself tied down in Casalecchio on the northern rim of the Apennines from 21 April until after the surrender because its patients could not be moved and the unit was too far in the rear to be relieved. Its place on the II Corps front was taken by the 1st Platoon of the 15th Field, which was attached north of San Giovanni on 24 April and was beyond the Adige at Cologna by the 28th.

The 2d Platoon of the 33d Field Hospital moved quickly through Bologna, San Giovanni, and Mirandola without ever getting close enough to the fighting lines to see more than a few patients. At Isola della Scala, several miles south of Verona, the unit finally caught up with the war on 26 April, handling 110 surgical cases in four days before going on to Bassano. The 3d Platoon of the 33d Field, at Monghidoro on Highway 65, took the nontransportable cases from the 88th and 91st Divisions in the opening days of the campaign and was tied down at its initial site for two weeks. On 29 April the unit made the long jump to Vicenza, but found itself still a rear installation.

Fifth Army battle casualties, based on hospital admissions, are shown by divisions for the period 1 April through 15 May in Table 33.

Hospitalization in the Army Area

Deployment and Use of Army Hospitals

The demands that would be placed upon the Fifth Army medical service by the Po Valley Campaign had been anticipated in the planning stage, and every feasible preparation was made to get hospitals into the forward areas as quickly as the inadequate highway network and the progress of the fighting allowed. As a preliminary step, the newly organized 171st Evacuation Hospital relieved the 170th on 2 April at Lucca, where it was to support the coastal drive of the 92d Division, while the 170th went into bivouac packed for movement when called upon. Surgical teams from the 170th served with other Fifth Army hospitals during this inactive period. The 15th Evacuation closed at Florence on 10 April two days before the originally scheduled D-day for the IV Corps attack; and the 94th closed its Florence unit on the 12th.[6]

The 15th Evacuation, which had enjoyed nearly seven months of rear-echelon security in Florence, was selected by General Martin to be the first hospital to move into the new combat zone. A location for the hospital was prepared by the engineers north of Porretta on Highway 64, only five miles from the IV Corps line of departure, but the greatest care was taken to conceal the purpose of the work. Latrines were dug under camouflage nets, and personnel of the advance detail bivouacked with adjacent combat units. The entire hospital was loaded onto 80 trucks by 12 April. Orders were received at 0820 on 14 April lifting the security ban and giving the convoy clearance for 0930. With trucks placed in the order in which they were to be unloaded, the convoy covered the 75-mile distance in three hours. Casualties were already on the way to the site from the clearing stations. The hospital opened at 1815 and had 78 patients, all nontransportables, by midnight. The next day the 1st Platoon of the 602d Clearing Company, 162d Medical Battalion, set up beside the 15th Evacuation to handle the overflow.

For three days the 15th Evacuation was the most forward Fifth Army hospital in the IV Corps sector. All nontransportable casualties were routed to this unit from an army control point farther up the road, transportable and slightly wounded cases going back to Pistoia and Montecatini. The hospital staff was augmented during this period by eleven auxiliary surgical teams. After four days nine of these teams were withdrawn, but two Brazilian teams were attached.[7] The Brazilian staff of 26 officers, 21 nurses, and 68 enlisted men who had been with the 16th Evacuation in Pistoia since November were also attached to the 15th Evacuation on 23 April, but remained only three days.

The 170th Evacuation Hospital opened on 18 April near Silla, somewhat forward of the 15th at the same time that a unit of the 32d Field moved into Vergato. Thereafter the 15th received mostly lightly wounded and transportable cases, the serious casualties going to the more forward units, but the total number of admissions rose. The shift of Fifth Army strength to the west of the Reno River had the effect of funneling the wounded from two more divisions down Highway 64. There was no room to back up the medical units already there, and all of

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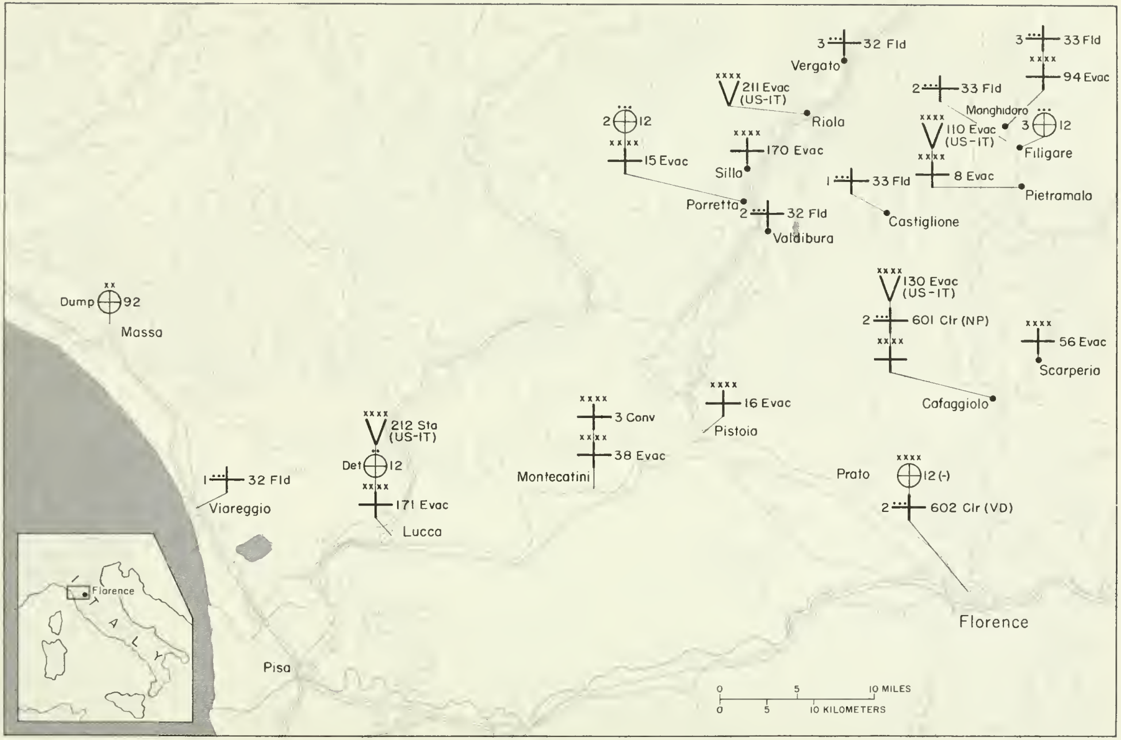
[6] Principal sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1945; (2) Annual Rpt, Surg, II Corps, 1945; (3) Unit rpts of the hosps and other med units mentioned in text; (4) ETMD's of hosps mentioned in text, for Apr 45.

[7] These were presumably the two teams that had been serving throughout the winter with the 2d Platoon of the 32d Field Hospital at Valdibura. See p. 440, above. The field unit was closed pending movement about the time the 15th opened at Porretta.


3 33 Fld
94 Evac
3 32 Fld
Vergato
211 Evac (US-IT)
2 33 Fld
Manghidoro
3 12
110 Evac (US-IT)
Filigare
2 12
Riola
170 Evac
15 Evac
Sillo
1 33 Fld
8 Evac
Pietramala
Porretta
2 32 Fld
Castiglione
Valdibura
Dump 92
Massa
130 Evac (US-IT)
2 601 Clr (NP)
56 Evac
Scarperia
Cafaggiolo
16 Evac
3 Conv
Pistoia
212 Sta (US-IT)
38 Evac
Montecatini
Det 12
Prato
12 (-)
1 32 Fld
Viareggio
171 Evac
2 602 Clr (VD)
Lucca
Florence
ITALY
Florence
Pisa
0 5 10 MILES
0 5 10 KILOMETERS

MAP 39—Hospitals and Medical Supply Dumps Supporting the Fifth Army Offensive, 18 April 1945 them worked around the clock until the combat troops began to debouch into the valley. By that time, enough ground had been secured to permit leapfrogging another hospital ahead of those in the Porretta-Vergato area. The 750-bed 38th Evacuation Hospital was brought up on 20 April to Marzabotto, where Highway 64 begins to level off. The Brazilian personnel from the 15th Evacuation were shifted to the 38th, to which they had originally been attached, about 26 April.[8] (*Map 39*)

On the II Corps front, meanwhile, the 94th Evacuation reopened at its old Monghidoro site on 17 April, about thirty hours after the corps jump-off. For the next few days the 94th shared the load of casualties in the Highway 65 sector with the 8th Evacuation at Pietramala. The 56th, at Scarperia, was already closed to admissions, and on 20 April began dismantling and loading for a quick dash to Bologna whenever that city should be captured.

During this period of heavy pressure on forward evacuation hospitals, the presence of base units in the army area proved invaluable. The 24th General Hospital in Florence and the 70th General in Pistoia were able to take enough movable casualties from the army units to permit the evacuation hospitals to keep up with demands made upon them.

The 56th Evacuation was to set up in tents in a large stadium, located by air reconnaissance. Other hospitals were to be brought into Bologna as rapidly as buildings could be found to house them. General Martin awaited word of the fall of Bologna at the 94th Evacuation, and was one of the early arrivals after the city was captured on 21 April. Martin's personal survey revealed no buildings suitable for hospital sites without extensive and time-consuming repairs, which were precluded by the unexpectedly swift advance of Fifth Army. Only the 56th was ordered forward, arriving on 22 April and taking patients at the predetermined stadium site at noon on the 23d.

The same speed of advance that left Bologna too far behind for the forward medical service almost as soon as it was captured, increased the difficulties of the Fifth Army surgeon. Rations, fuel, ammunition, assault boats, and bridging materials, all had to be brought by truck across the mountains from supply depots in the Florence area, and there were no trucks left over to move the hospitals. General Martin solved the problem by pooling all the organic transportation of his semimobile evacuations. Operating on a 24-hour basis and alternating drivers, these vehicles moved the bulk of the Fifth Army hospitals into the Po Valley on a schedule so expertly managed that no hospital was out of action for more than twenty-four hours.

At 0900 on 23 April, while the 56th Evacuation was still setting up its equipment in Bologna, the 94th was ordered to close at Monghidoro. All patients were evacuated by 2100 and the first convoy of trucks was on the road before dawn of 24 April. The destination was Carpi, a village about ten miles north of Modena. Using buildings of a civilian hospital, the 94th was taking patients at its new site by 2000. Even more rapid was the move of the 750-bed 16th Evacuation, which closed at Pistoia on 23 April, moved during the night to San Giovanni, a road junction fifteen miles

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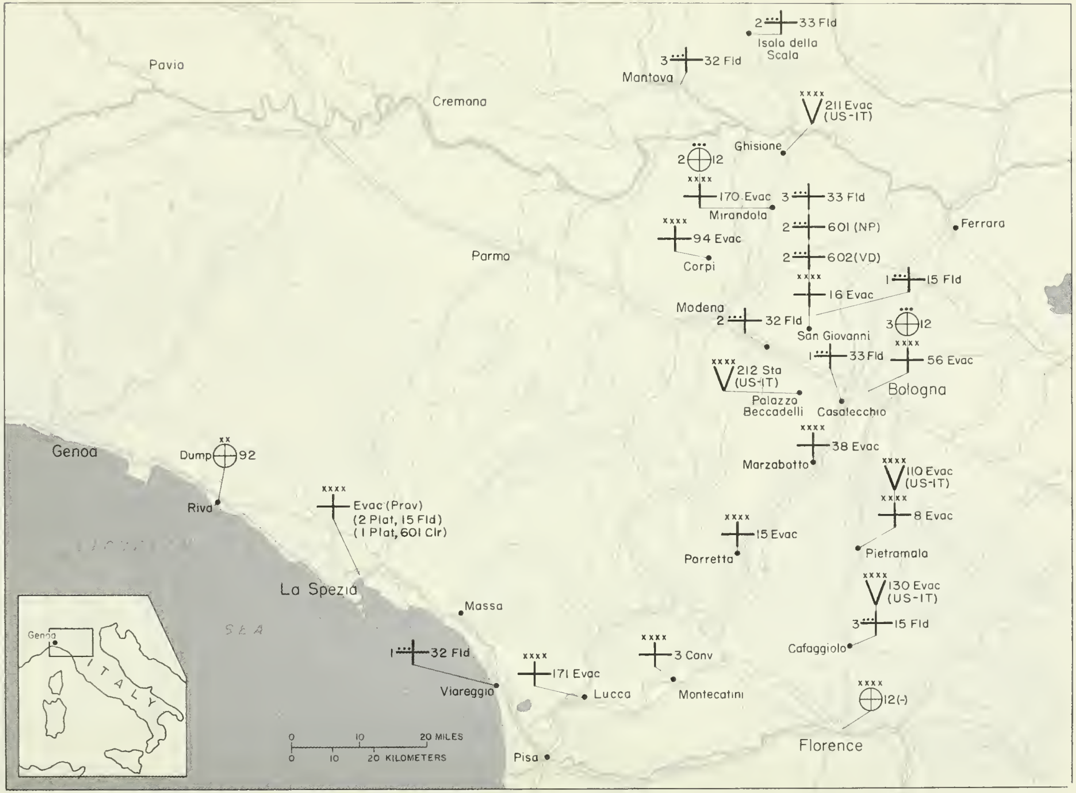
[8] See p. 440, above.


2 33 Fld
Isola della Scala
3 32 Fld
Mantova
Pavia
Cremona
XXXX
211 Evac (US-IT)
Ghisione
2 12
XXXX
170 Evac
Mirandola
3 33 Fld
2 601 (NP)
2 602 (VD)
XXXX
94 Evac
Corpi
Parma
Ferrara
XXXX
16 Evac
1 15 Fld
Modena
2 32 Fld
San Giovanni
3 12
XXXX
1 33 Fld
56 Evac
XXXX
212 Sta (US-IT)
Palazzo Beccadelli
Casalecchio
Bologna
XXXX
38 Evac
Marzabotto
XXXX
110 Evac (US-IT)
XXXX
8 Evac
Pietramala
XXXX
15 Evac
Porretta
XXXX
130 Evac (US-IT)
3 15 Fld
Cafaggiolo
Genoa
XX
Dump 92
Riva
XXXX
Evac (Prov)
(2 Plat, 15 Fld)
(1 Plat, 601 Clr)
La Spezia
SEA
Massa
1 32 Fld
Viareggio
XXXX
171 Evac
Lucca
XXXX
3 Conv
Montecatini
XXXX
12(-)
Florence
Pisa
0 10 20 MILES
0 10 20 KILOMETERS
Genoa
ITALY

Map 40—Fifth Army Hospitals and Medical Supply Dumps, 26 April 1945 northwest of Bologna, and was functioning as a hospital once more by 1800 on 24 April. (*Map 40*)

On the same day, the neuropsychiatric and venereal disease hospitals, operated respectively by the 601st and 602d Clearing Companies, also moved to San Giovanni, the former from Cafaggiolo and the latter from Florence. In each case the move was made by organic transportation of the medical battalion to which the unit belonged. The venereal disease hospital carried 30 patients with it in ambulances borrowed from one of the battalion's collecting companies. Penicillin treatment of these patients was continued en route without interruption.

On 25 April the 1st Platoon of the 601st Clearing Company from Montecatini and the 2d Platoon of the 15th Field Hospital from the Cafaggiolo area were moved to La Spezia to act as a provisional evacuation hospital for the 92d Division.

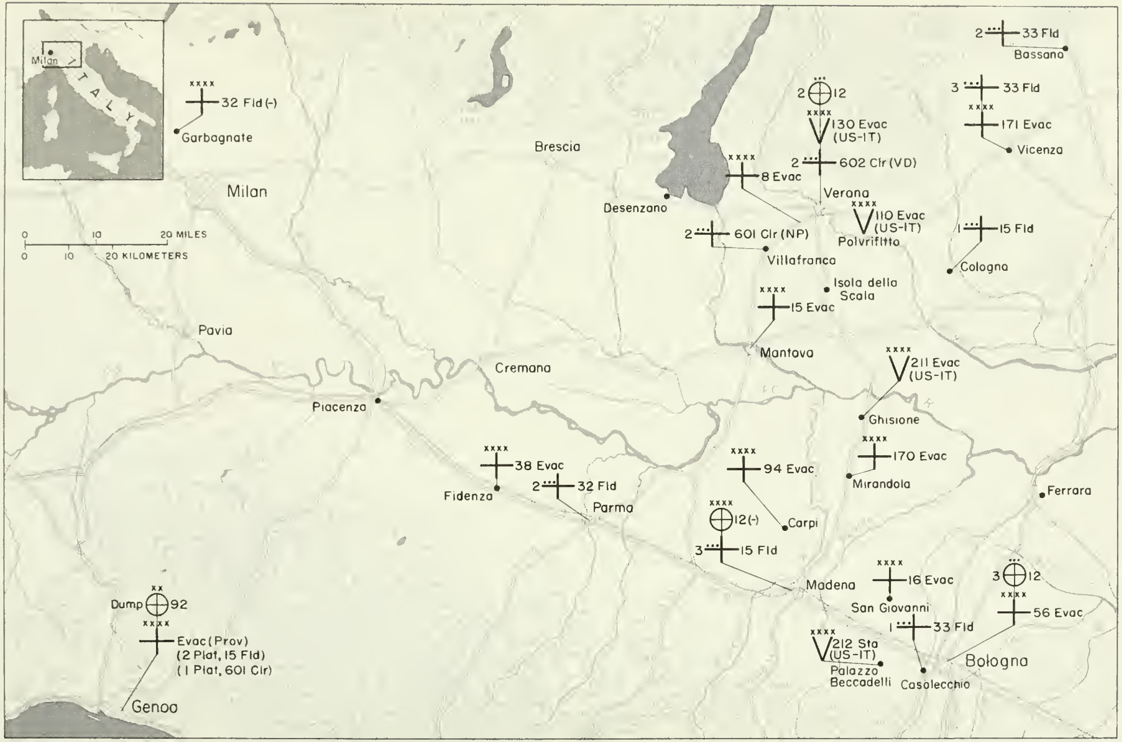
The 170th Evacuation, after a week of hectic operation on Highway 64, evacuated its transportable patients to the 70th General in Pistoia on the night of 25 April. Leaving one ward behind to care for 27 patients who could not be moved, the 170th pulled out the morning of 26 April and reopened the same day at Mirandola, about eighteen miles south of Ostiglia where combat units were still crossing the Po. Only the 171st Evacuation at Lucca, the 8th at Pietramala, and the 15th at Porretta were still in the mountains, and all three of these were alerted for movement.

The 15th went first, leaving a holding detachment of 2 officers, 2 nurses, and 15 enlisted men to care for 17 nontransportable patients. Moving the hospital tentage and equipment on 10-ton trailers, packing was accomplished in three hours. The 15th arrived in Mantova north of the Po the afternoon of 28 April, where it took over a large sanatorium and more than 300 patients from a unit of the 32d Field. Until 25 April the buildings had housed a German hospital.

The 8th Evacuation, after several days of waiting for transportation, received its vehicles in the late afternoon of 29 April, moved out over the battle-scarred remains of Highway 65 during the night, and admitted its first patients at the new site just south of Verona before the end of the day, 30 April. The 171st also moved out the night of 29 April, but because its new site was Vicenza, 200 miles away, with the whole width of the Apennines to cross, it did not open until 1 May. In the meantime, the 38th Evacuation had dismantled, packed, moved 90 miles to Fidenza west of Parma on Highway 9, and reopened on 30 April. (*Map 41*)

The last hospital moves before the German surrender put the 92d Division's provisional evacuation in Genoa by 1 May; the venereal disease hospital in Verona and the neuropsychiatric hospital at Villafranca on 2 May. Since there were no longer enough neuropsychiatric casualties to justify the existence of a hospital for that purpose alone, the 2d Platoon of the 602d Clearing Company reverted to air evacuation holding duties at Villafranca airport. The 170th Evacuation was in process of moving from Mirandola to Treviso, and the 1st Platoon of the 602d Clearing Company was en route from Porretta to Modena when the war in Italy came to an end.

For all Army hospitals supporting the Po Valley Campaign, the pattern of admissions was similar. Heavy casualties,


Milan
ITALY
32 Fld (-)
Garbagnate
Milan
0 10 20 MILES
0 10 20 KILOMETERS
Pavia
Brescia
Desenzano
8 Evac
2 12
130 Evac (US-IT)
2 602 Clr (VD)
Verona
110 Evac (US-IT)
Polvrifitto
2 601 Clr (NP)
Villafranca
2 33 Fld
Bassano
3 33 Fld
171 Evac
Vicenza
1 15 Fld
Cologna
Isola della Scala
15 Evac
Mantova
Cremana
Piacenza
211 Evac (US-IT)
Ghisione
38 Evac
Fidenza
2 32 Fld
Parma
94 Evac
Carpi
170 Evac
Mirandola
Ferrara
12(-)
3 15 Fld
Madena
16 Evac
San Giovanni
3 12
56 Evac
1 33 Fld
212 Sta (US-IT)
Palazzo Beccadelli
Casolecchio
Bologna
Dump 92
Evac (Prov)
(2 Plat, 15 Fld)
(1 Plat, 601 Clr)
Genoa

MAP 41—Fifth Army Hospitals and Medical Supply Dumps, 2 May 1945 with a preponderance of severe wounds, characterized the start of the drive, giving way in the later phases to relatively few American casualties, mostly lightly wounded, and a growing volume of prisoner patients.

The 171st Evacuation—the only evacuation hospital supporting the 92d Division's coastal attack—admitted 2,416 patients between 2 April and the end of the month, of whom 1,128 were battle casualties. Italian partisans made up the greater portion of the 364 Allied patients treated.

The 15th Evacuation admitted 1,592 patients, 1,173 of them surgical cases, during its two weeks at Porretta, with most of the serious cases coming in the first four days. The 170th, in the course of a week spent in the same area, admitted 528, of whom 372 were battle casualties. The 94th Evacuation admitted 496 surgical cases at Monghidoro and Carpi. The 8th Evacuation, which was for two days the only hospital backing up the II Corps attack, took 72 priority cases on 16 April and 97 more in the next twenty-four hours, "as serious and severe" as any previously seen in Italy. The 8th had a backlog of 80 operative cases by the morning of 18 April, and received another 85 that day. With the 94th set up ahead of them and the corps breaking out of the mountains, the load then dropped abruptly. By 20 April the 8th Evacuation was receiving only rear echelon cases.

The 16th Evacuation had 1,016 admissions at San Giovanni by the end of April, 542 of them battle casualties, but the bulk of these were transferred from more forward units. Battle casualties also made up the larger group of patients at the 38th and 56th Evacuations, but almost half were prisoners of war at the 38th and more than half at the 56th.

The medical service in the Po Valley Campaign, like the military operations, falls into two distinct phases. Before the breakout from the mountains the use of field and evacuation hospitals and corps clearing companies followed normal lines, but with activity intensified by the heavy influx of casualties and by long and difficult evacuation lines. In the valley itself the whole hospitalization picture was confused, with poor communications and inadequate transportation forcing hospitals to assume unorthodox roles. Field hospital platoons, with or without assistance from clearing companies, operated as evacuation hospitals, and evacuation ran the gamut from first priority surgery to station hospital duties.

Hospitalization of Prisoners of War

Until the Po River was reached, enemy casualties were routinely evacuated to Fifth Army hospitals, where they were cared for in the same manner as U.S. and Allied patients. Only a trickle of wounded Germans reached the 171st Evacuation Hospital, owing to the lengthening evacuation lines on the 92d Division front. The total was no more than 100 out of 2,000 patients treated by that unit during its stay at Lucca. On the IV Corps front, however, the 15th, 170th, and 38th Evacuations on Highway 64 admitted a considerable number of German casualties after the first week of combat. The 8th and 94th Evacuations supporting II Corps also began taking enemy casualties before leaving the mountains.[9]

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[9] This section is based primarily on the follow-

Wounded German Receiving Plasma in Villafranca, April 1945

The number of enemy casualties became so large as to constitute a major problem after the fighting turned into a battle of pursuit in the Po Valley. The bulk of the German medical facilities had by that time been withdrawn north of the Po, and German medical corpsmen south of the river had no alternative but to bring their casualties to Allied clearing stations or hospitals. The 56th Evacuation at Bologna, the 38th at Marzabotto and Fidenza, the 16th at San Giovanni, the 94th at Carpi, and the 170th at Mirandola all received German casualties by the hundreds in the closing days of the war in Italy. The 38th treated close to 500, the 56th more than 800 before the end of April. At the 56th, two German surgical teams were organized and kept busy operating on prisoners. In many cases German ambulance drivers who brought their wounded to American hospitals were allowed to return unguarded for further loads.

The first German hospital to be cap-

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ing: (1) Annual Rpt, Surg, Fifth Army, 1945; (2) Annual Rpt, Surg, II Corps, 1945; (3) Unit rpts of the hosps and med battalions mentioned in text; (4) ETMD's of the named hosps for Apr and May 45.

German Hauptverbandplatz, *equivalent to a reinforced clearing station, captured 25 April 1945.*

tured intact was taken by the 10th Mountain Division on the south bank of the Po on 23 April. The unit was fully equipped, with its full complement of doctors, nurses, and corpsmen, but its supplies were virtually gone. In this case, the patients were evacuated to U.S. units, and the dismantled hospital was sent to the rear. It was soon clear, however, that the Allies could not afford to waste facilities in this fashion. A directive from Allied Force Headquarters required Fifth Army thereafter to use German hospitals and personnel to care for German wounded under supervision of American medical personnel.

In the IV Corps sector, the field hospital units were ordered to set up their own establishments in connection with captured German hospitals, combining administration of the prisoner units with their own. In the II Corps area the task of administering enemy medical units devolved upon the 54th Medical Battalion. The number of German hospitals taken in the final days, however, was too great for either technique to be used exclusively. Divisional medical units and evacuation hospitals also participated when occasion required.

For example, the 3d Platoon of the 32d Field Hospital, coming up from Vergato, crossed the Po on a ponton bridge early in the afternoon of 26 April, entered Mantova on the heels of the retiring enemy, and proceeded immediately to a large civilian hospital and sanatorium known to have been used by the Germans. Until the preceding day the establishment had served the enemy as a base hospital. Since that time it had been administered by 5 British enlisted men who had been prisoners. There were 54 Allied patients, including a few Americans, and 140 German patients. The staff consisted of 3 German medical officers, 5 volunteer Italian doctors, 3 Italian medical students, 13 volunteer Italian nurses, a dozen or more nuns from a nearby convent, 30 German medical corpsmen, 18 Italian medical soldiers who had been interned by the Fascists, a German Army chaplain, and some 15 Italian partisans acting as guards.

Most of the Allied patients were in fair condition, despite short supplies of both food and drugs, but infected wounds calling for surgery were common among the Germans. The field hospital unit operated the prisoner of war hospital as well as its own for two days, then turned both over to the 15th Evacuation, which was operating as a POW hospital almost exclusively by the end of the war.

The field hospital unit, meanwhile, moved on to Garbagnate near Milan, where another German hospital was taken over. The Garbagnate establishment had close to 600 German patients in charge of a minimum staff, a supply depot, and a laboratory. Here again there was little food and no fuel for essential services such as running sterilizing equipment and cooking.

At Parma, where the 2d Platoon of the 32d Field took over a German hospital on 28 April, 220 German patients were being cared for by 15 German medical officers, 120 corpsmen, and 3 Italian Red Cross nurses. The establishment had to be put under immediate guard to protect its patients from attacks by partisans. On 2 May the same platoon of the 32d Field added administration of a second German hospital, located ten miles away at Brescello, to its duties. The Brescello unit had 83 patients. Its existence was reported by a German medical officer who came to the Parma unit under Partisan guard.

In the II Corps sector, the 54th Medical Battalion took over its first German hospital on 27 April, when the 380th Collecting Company assumed administration of the *29th Panzer Division* hospital southeast of Verona. Enemy units at Citadella and Caldogno were taken over on 30 April, one at Galliera on 1 May, and another at Paderno on 2 May. All of these hospital sites were in the Vicenza-Treviso area, where the 171st Evacuation in the opening days of May also took more German than Allied patients.

The condition of these captured hospitals varied markedly, both as to equipment and in terms of staff, but a unit captured at Bergamo by the 1st Armored Division, which had 14 doctors to care for 1,180 patients, was more typical than the Parma hospital with its 15 doctors and 220 patients.

The process of rounding up and concentrating the 23,000 prisoner casualties taken by Fifth Army was only beginning

LAKE GARDA, *used by assault boats and local craft to evacuate patients.*

when the war ended. The main medical story for prisoners of war belongs to the postwar period.[10]

Evacuation From Fifth Army

Evacuation from the battlefields and from division clearing stations in the Po Valley Campaign followed the normal pattern, with the 54th Medical Battalion evacuating from II Corps and the 163d Medical Battalion from IV Corps and the 92d Division. Both corps medical battalions were reinforced when necessary by the attachment of collecting companies or ambulance platoons from one of the two Fifth Army medical battalions. Evacuation during the mountain phases of the fighting was by hand litter, jeep, and ambulance. On the 92d Division front the pack mules that brought in supplies were sometimes used to carry out the wounded from otherwise inaccessible positions. In the Po Valley, evacuation was predominantly by ambulance, trucks being used for wounded prisoners and ambulatory cases when ambulances were not available. Dukws and assault boats were used to ferry the wounded across the Po, and to bypass roadblocks along Lake Garda. The problem of evacuation within the army area was primarily one of distance and transportation, which was accentuated but not altered by the presence of large numbers of enemy wounded in the later stages of the campaign and by the tendency of combat units to outrun their medical support.[11]

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[10] See pp. 534–43, below.

Evacuation from Fifth Army hospitals to base installations, however, posed difficulties not previously encountered by the medical service in Italy. Until the Po Valley itself was occupied, fixed hospitals could not be brought closer than they were in the Florence-Pistoia-Leghorn area. Between these hospitals and the battle front lay mountain ranges 50 to 100 miles in depth. All rail lines had long since been knocked out, leaving only highways gutted by six months of war to supply the army as well as to evacuate the wounded. Air evacuation could not be used until captured airfields in the Po Valley could be made operational, and even then might be too hazardous since the slow C–47's would be highly vulnerable while they gained altitude for the mountain crossing.

Since the eastern end of the Apennine chain would be easiest to cross, two station hospitals, the 60th and the 225th, both assigned to the Adriatic Base Command, were moved into the Ancona area before the beginning of the campaign, but no other shifts were practical until sites for fixed hospitals were available north of the mountains.

Until the closing days of the war, all evacuation from Fifth Army to base hospitals was thus by ambulance, the bulk of it over the battered Highways 64 and 65, with distances stretching out to a hundred miles and more as the evacuation hospitals moved into the Po Valley. The process was constant. The heavy casualties of the first week forced continuous clearing of forward units to make way for the newly wounded, and as the casualties diminished, the distances increased to keep ambulances unremittingly on the road. Patients were carried to the nearest base hospital—the 24th General in Florence and the 70th General at Pistoia for the most part—where bed space was kept open by the daily transfer of older cases to Leghorn and Naples by rail and air.

The airfield at Bologna was operational by 25 April, and a detachment of the 802d Medical Air Evacuation Transport Squadron set up a station there on that day.[12] A second air evacuation station was established at Villafranca south of Verona on 2 May, where the 2d Platoon of the 601st Clearing Company combined the functions of air evacuation holding unit with those of Fifth Army neuropsychiatric hospital.

The only fixed hospital to open north

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[11] This section is based primarily on the following: (1) Annual Rpt, Surg, Fifth Army, 1945; (2) Final Rpt, Plans and Opns Off, MTOUSA, 1945; (3) Unit rpts, 54th, 161st, 162d, 163d Med Bns; (4) Unit rpts of hosps and other med installations mentioned in text; (5) G–4 Rpt in Hist, 92d Div, Apr 45.

[12] Hist, 802d MAETS, Apr 1945. There is no record, however, either in the monthly report of the squadron or in the medical situation reports of the Peninsular Base Section of any patients actually being evacuated from Bologna by air before the end of April. The 402d Collecting Company, which was supporting the 56th Evacuation Hospital at Bologna until 2 May, states in its final report (History, 161st Medical Battalion, 1 January–1 August 1945), that there was no air evacuation from Bologna during its stay there.

Ambulances Fording Reno at Praduro *while traffic bound for front uses Bailey bridge (right).*

of the Apennines before the German surrender was the 74th Station, which began taking patients in Bologna on 27 April. There were 600 cases by 1 May, and another 400 less serious cases had been housed, fed, treated, and passed on to the rear. The 6th General had meanwhile arrived in Bologna and was setting up, while the 37th General was en route to Mantova. With the establishment of 3,000 fixed beds so near at hand, evacuation hospitals were holding as many patients as was physically possible when the war ended.

Medical Supplies and Equipment

In preparation for the Po Valley Campaign, the 2d Storage and Issue Platoon of the 12th Medical Depot Company sent an advance section up Highway 64 on 7 April. Consisting of five enlisted men and ten tons of medical supplies, the section set up a dump at Valdibura, adjacent to 32d Field Hospital. On 16 April the platoon joined its advance section, moving up to Porretta where an issue point with 40 tons of supplies was established. A small detachment was left behind at Lucca, where it served the 92d division and medical units still in the immediate vicinity. Its personnel were attached for rations and quarters to the 171st Evacuation Hospital. The Lucca section functioned independently of the parent platoon, forwarding any requisitions it could not fill directly to the main depot in Florence.[13]

The 3d Storage and Issue Platoon, which had supported II Corps throughout the winter from its dump near Monghidoro, moved forward to Bologna on 24 April with 50 tons of medical supplies. The following day the Porretta dump displaced forward to Mirandola, transferring again to Verona on 30 April. The depot headquarters, maintenance section, and 1st Storage and Issue Platoon moved on 1 May from Florence to Modena, where the base dump was established with 150 tons of supplies.

The 92d Division, remote as it was from the issue points supplying II and IV Corps, drew its medical supplies through its own organization. The divisional medical supply dump moved from Viareggio to Massa on 16 April, was in Riva just south of Sestri ten days later, and opened in Genoa on the 29th.[14]

On the 92d Division front, transportation difficulties were constant, with mule pack trains being used in the mountainous areas. On the II and IV Corps fronts, no difficulties were experienced in keeping forward dumps supplied until 25 April. Up to that time both corps installations could be reached from Florence in no more than a day for the round trip. For the rest of the month, however, until the base depot itself could be moved into the Po Valley, both distance and the rapid consumption of supplies to care for prisoners of war made resupply difficult. Maximum use of captured German medical supplies and equipment was made during this period.

Despite the speed of the campaign, the dispersion of installations, and the shortages of transportation, there is no record that any Fifth Army medical unit failed to obtain adequate supplies or replace equipment through regular channels. The success of the 12th Medical Depot Company was achieved, moreover, while supplying close to 300,000 troops instead of the 75,000 normally served by such a unit.

The optical and dental services of the 12th Medical Depot Company continued to function without interruption through the Po Valley Campaign.

Professional Services in the Army Area

Medicine and Surgery

While the total number of hospital admissions during the brief period of the Po Valley Campaign was large—6,151 cases of disease, 1,533 cases of injury, and 5,092 battle casualties, or 12,776 admissions not counting prisoners of war—there were no outstanding developments in combat medicine or surgery. Evacuation hospitals, especially the 15th and 170th on Highway 64 and the 8th and 94th on Highway 65, handled a larger proportion of the priority surgical cases than had been true in earlier campaigns, but this was because the majority of battle wounds occurred in the opening days of the offensive while the evacuation hospitals were still close to the action. The field hospital platoon with attached surgical teams continued to be the preferred installation for forward surgery. Whole blood flown up from the Naples blood bank and from bleeding sections in Florence and Pisa was used extensively, and was again delivered to forward areas by cub plane.[15]

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[13] This section is based primarily on the following: (1) Annual Rpt, Surg, Fifth Army, 1945; (2) Annual Rpt, 12th Med Depot Co, 1945; (3) Davidson, Med Supply in the MTOUSA, pp. 140–42; (4) Unit rpts of Fifth Army hosps and med bns.

[14] G–4 Rpt in Hist, 92d Inf Div, Apr 45.

The medical problems were the normal ones, predominantly respiratory and intestinal diseases attributable to exposure or to inadequate sanitation in newly conquered areas. An outbreak of hepatitis in the 1st Battalion on the 86th Infantry, 10th Mountain Division, during the first two weeks of April suggested drinking water as the source of infection. The 3d Battalion of the 362d Infantry, 91st Division, suffered an outbreak of atypical pneumonia in the second and third weeks of April, with evidence indicating a barn used for showing films and an adjacent straw pile as the point of origin. The incidence of venereal disease declined in April, as was to be expected in combat.

Psychiatric disturbances increased markedly over the static winter months, with a total of 1,430 cases in April, of which 668 were returned to full duty from the division clearing stations or rehabilitation centers and 266 from hospitals, which also returned 293 to limited duty. Only 203 were evacuated out of the army area, or 14.2 percent—lower than the percentage for any other combat month in Fifth Army history. The number of psychiatric casualties declined sharply during the battle of pursuit in the Po Valley, and by the end of hostilities was no longer enough to justify the separate existence of a neuropsychiatric hospital at the army level.

While both medical and surgical services of Fifth Army units were pushed to the limit of their capacities in the three weeks of active combat, the problem was always one of applying familiar techniques on the required scale rather than the development of new methods to cope with unforeseen crises.

Dental Service

Dental work during the weeks of actual combat was largely confined to emergency cases, with many dental officers, particularly those on the staffs of evacuation hospitals, performing a variety of other functions. Complete dental service was nevertheless available in the army area throughout the campaign.[16]

The IV Corps dental clinic ceased operation in mid-April when the 32d Field Hospital platoon to which it was attached closed at Valdibura, and operations were not resumed until after the end of hostilities. The II Corps clinic, however, continued to operate throughout the campaign, moving forward with the clearing company of the 54th Medical Battalion. The Fifth Army dental clinic, conducted by the 2d Platoon of the 602d Clearing Company, 162d Medical Battalion, also functioned in its normal capacity, moving with the platoon, which also operated the army venereal disease center, to San Giovanni on 24 April and to Verona on 2 May. Mobile prosthetic and operative trucks and the mobile dental dispensaries of the divisions were in service as far forward as circumstances permitted.[17]

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[15] Principal sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1945; (2) ETMD's for Apr, May and Jun 45; (3) Unit rpts of Fifth Army hosps and of 2d Aux Surg Gp.

[16] Principal sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1945; (2) Annual Rpt, 32d Field Hosp, 1945; (3) Annual Rpt, 54th Med Bn, 1945; (4) Dental Hist, MTO.

The ratio of dental officers to army strength for April 1945 was 1:924, a slight improvement over the preceding month but higher than the average ratio for the North Apennines Campaign. The total number of dental operations performed in Fifth Army in April was less than for any month since September 1944. The length of time available for getting the troops into shape before the beginning of the offensive was a factor in reducing the need for dental work once the drive was under way.

Veterinary Service

Animal transportation was as essential to Fifth Army in the Po Valley Campaign as it had been throughout the earlier fighting in Italy. The only noteworthy changes were in the direction of better organization and more complete veterinary support. By the launching of the final drive, Fifth Army had 17 Italian pack mule companies, grouped into 5 battalions under the 2695 Technical Supervision Regiment. Each company had 269 animals and 379 men, including an Italian veterinarian. Three U.S. veterinary officers functioned at the battalion level. In addition to these units, the 92d Division had its own provisional pack mule battalion. Shortly before the start of the campaign, the 10th Mountain Division received 180 horses for its cavalry reconnaissance troop from the Fifth Army Remount Depot, and 525 mules direct from the United States. The division's animal strength ultimately reached 822, not counting attached Italian pack mule companies. There were approximately 4,500 horses and mules and 125 scout dogs in Fifth Army during this period.[18]

Veterinary service was supplied by division and corps veterinary personnel, which in the case of the 10th Mountain Division was substantial.[19] Fifth Army's four Italian-staffed and U.S.-equipped veterinary hospitals were supplemented by the late arrival on 17 April of the 36th Veterinary Company, whose 5 officers and 59 enlisted men took over the bulk of the animal evacuation thereafter. The three semitrailers with which the company was equipped proved less satisfactory for negotiating the difficult Italian roads than the trucks previously used.

The 212th Veterinary Station Hospital, serving IV Corps, was the first to enter the Po Valley. The unit closed at Lucca on 20 April and opened at Palazzo Beccadelli, on the edge of the plain about ten miles west of Bologna, on the 22d. The 211th Veterinary Evacuation, also a IV Corps unit, closed at Riola in the 10th Mountain Division sector on 24

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[17] See pp. 452–53, above.

[18] Sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1945; (2) Opns Rpt, II Corps, 1 Apr–2 May 45; (3) Opns Rpt, IV Corps, Apr 45; (4) Hist, 92d Div, Apr 45; (5) Annual Rpt, Surg, 10th Mountain Div, 1945; (6) Vet Rpt, Sick and Wounded Animals, Apr 1945; (7) Hist, 36th Vet Co (Separate); (8) *Fifth Army History*, pt. IX; MS, Veterinary History, Mediterranean Theater of Operations.

[19] The 10th Mountain Div had 22 veterinary officers and 182 enlisted men. See p. 432, above.

April, opening two days later at Ghisione just south of the Po in the vicinity of Ostiglia. The two veterinary evacuation hospitals attached to II Corps were somewhat later in getting across the mountains, both moving into the Verona area in the closing days of the campaign. The 110th opened at Polvrifitto southeast of the city on 28 April, while the 130th opened in Verona itself on the 30th. The Fifth Army Remount Depot moved to San Martino, close to the site of the 211th Veterinary Evacuation Hospital, about 1 May. (*See Maps 39, 40, 41.*)

While animal casualties were fewer than in the North Apennines Campaign, the veterinary problem was complicated by the capture of thousands of German animals north of the Po, many of which were in need of immediate attention.[20]

Veterinary food inspection detachments continued to operate with Fifth Army throughout the Po Valley Campaign, but their work was of a routine nature.

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[20] See p. 517, below, for a discussion of the care and disposition of these animals.

CHAPTER XIII

The Italian Communications Zone Northern Phase

As the war in Italy moved into the northern Apennines, the communications zone was extended up the peninsula to the Arno Valley. The requirements of the campaign in southern France, however, delayed the northward movement of medical installations and placed an undue burden on the evacuation facilities. It was not until Fifth Army had been stalled by snow and mud a short ten miles from the Po plain and Seventh Army had passed to control of the European Theater of Operations that a sweeping realignment of communications zone activities was possible.

Organizational Changes Affecting the Medical Service

Theater Medical Organization

Since February 1944 responsibility for the operating functions of the Medical Department in the Italian communications zone had rested with the medical section of the Services of Supply organization—SOS NATOUSA, redesignated Communications Zone, NATOUSA, as of 1 October. By midsummer of 1944, the medical section was deeply involved in preparations for the invasion of southern France, and furnished key personnel for the base organizations that followed the Seventh Army advance. This diversion of personnel necessarily increased the work load of those remaining in Italy, but the situation was understood to be temporary since logistical support of the 6th Army Group would ultimately become the responsibility of ETO. Shortly after the command of Seventh Army passed to SHAEF on 15 September, the date for the transfer of the supporting functions, including medical, was fixed as 1 November.[1]

At this time, however, the SHAEF commander, General Eisenhower, indicated his desire that an operating communications zone organization be part of the transfer. In effect, Communications Zone, NATOUSA, was to go over to ETO as the Southern Line of Communications (SOLOC), leaving the American component of Allied Force Headquarters to develop a new organization to carry on communications zone functions in the Mediterranean theater. For the Medical Department, the most practical solution appeared to be the resumption of operating functions by the Medical Section,

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[1] Principal sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944; (2) Hist, Med Sec, Hq COMZ MTOUSA; (3) Munden, Administration of Med Dept in MTOUSA, pp. 129–78; (4) Davidson, Med Supply in MTOUSA, pp. 155–56; (5) *Logistical History of NATOUSA–MTOUSA*. See also pp. 399–401, above.

General Stayer

NATOUSA, which would in addition assume the medical supply responsibilities formerly exercised by the SOS organization.

On 1 November 1944 the theater boundaries were redrawn to exclude southern France, and the North African Theater of Operations, United States Army (NATOUSA), was redesignated Mediterranean Theater of Operations, United States Army (MTOUSA). The organization was completed on 20 November when Communications Zone, MTOUSA, ceased to exist, and the functions of its medical section were formally assumed by the Medical Section, Headquarters, MTOUSA. The consolidation was effected with the transfer of only 5 officers and 16 enlisted men from the outgoing group, all of them specialists in medical supply.

Few changes were necessary in the composition of the MTOUSA medical section. Maj. Gen. Morrison C. Stayer continued as theater surgeon with Colonel Standlee as his deputy. Lt. Col. (later Col.) Joseph Carmack, administrative officer, Col. William C. Munly, medical inspector, and Col. William S. Stone, preventive medicine officer, were among the section heads whose functions were unchanged. Neither the surgical consultants section, headed by Colonel Churchill, nor the medical consultants section, which included Colonel Long as medical consultant and Colonel Hanson as consultant in neuropsychiatry, was affected by the reorganization. The MTOUSA dental officer, Colonel Tingay, and the theater veterinarian, Colonel Noonan, were also unaffected by the reorganization. The replacement of Colonel Wilbur, director of nurses, by Lt. Col. Margaret E. Aaron on 14 December was a matter of normal rotation, not related to any change in functions. Colonel Aaron had served in the European theater, where she had been Director of Nurses, SOS ETOUSA.

In the reorganized Medical Section, MTOUSA, hospitalization and evacuation fell into the experienced hands of Col. Albert A. Biederman, who had rejoined the section as the plans and operations officer early in September after six months with the SOS organization. Only in the area of medical supply, which had never been an operating function of the MTOUSA medical section, was it necessary to add significantly to the staff. Colonel Radke, who had been NATOUSA medical supply officer since the spring of 1943, remained in that capacity until 20 December, but his role continued to be confined to the policy level. The operating functions were performed under the direction of Colonel Jones, who had headed the SOS medical supply section since May 1944. Jones brought with him from the medical section of Comzone MTOUSA, a trained staff and a functioning organization. He succeeded Radke as MTOUSA medical supply officer on 21 December.

The MTOUSA medical section moved out of the royal palace in Caserta on 12 November to the quarters formerly occupied by the SOS medical section in an Italian military hospital. On 23 November the personnel allotment of the section was increased to cover losses, and on 24 December an additional officer and 3 enlisted men were allocated to it, bringing the authorized total to 32 officers, including 2 nurses, and 80 enlisted men. Three medical officers were added in May 1945, bringing the aggregate personnel strength of the section to 115.

Concentration of Communications Zone Functions in Italy

The November 1944 reorganization brought the base sections back under the control of theater headquarters at a time when the progress of the war was concentrating the Mediterranean forces in northern Italy. The invasion of southern France had left the theater short of troops, transportation, equipment, and hospital beds, and it was therefore essential to eliminate so far as possible the factor of distance.[2]

In North Africa, which had been substantially stripped of supplies and hospital beds to build up the bases in southern France, the Eastern and Atlantic Base Sections were absorbed by the Mediterranean Base Section on 15 November. The base section headquarters was moved from Oran to Casablanca early in December and on 1 March 1945 the whole of North Africa passed to control of the Africa–Middle East Theater.[3]

With all of southern France and all of Italy south of the Arno firmly in Allied hands, the Mediterranean islands also lost their strategic importance. The Island Base Section in Sicily had already been closed out in mid-July, and the last U.S. hospital left Sardinia the end of October. The Northern Base Section, consisting of the island of Corsica, continued in operation on a reduced scale until the end of the war, being finally closed out on 25 May 1945.

The Peninsular Base Section, on the other hand, grew in importance as the African and island bases declined. As soon as the facilities of the port of Naples and the hospitals concentrated in that vicinity were no longer needed for the logistical support of the forces in southern France, the base section began shifting its strength to the Leghorn-Florence-Pisa triangle. PBS headquarters was established in Leghorn on 25 November, the subheadquarters in Naples thereafter being designated as PBS South. Colonel Arnest, the PBS surgeon, moved to Leghorn with the base headquarters, leaving Col. Leo P. A. Sweeney as his deputy in Naples.

At the same time the U.S. component of Rome Allied Area Command was redesignated Rome Area, MTOUSA, effective 1 December. The Rome Area surgeon was Lt. Col. (later Col.) Benjamin L. Camp, who also retained his office as deputy to the RAAC surgeon, Col. T. D. Inch of the Royal Army Medical Corps. The single U.S. fixed hospital scheduled to remain in Rome was brought under the Rome Area jurisdiction, together with responsibility for sanitation, venereal disease control, and other miscellaneous medical functions.

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[2] Principal sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944; (2) Final Rpt, Plans and Opns Off, Office of the Surg, MTOUSA; (3) Annual Rpt, Surg, PBS, 1944; (4) Annual Rpt, Surg, MBS, 1944; (5) Annual Rpts, Surg, NORBS, 1944, 1945; (6) Annual Rpt, Surg, Rome Area, 1944; (7) Monthly Hist, Med Sec, Rome Area, Jan–May 45; (8) AAFSC MTO, Annual Med Hist, 1945.

[3] For subsequent activities, see pp. 80ff., above.

Similarly, the Adriatic Depot was reconstituted on 28 February as the Adriatic Base Command (ABC) with headquarters at Bari. Though its primary mission was still that of supporting the U.S. Army Air Forces units in Italy, it was made responsible directly to MTO USA. After detailed study of the point, the hospitals previously attached to the Army Air Forces Service Command were brought under the aegis of the Adriatic Base Command.

By the end of hostilities, the medical activities of the communications zone in the Mediterranean theater centered in PBS Main at Leghorn, with lesser and largely subsidiary bases in Naples, Rome, and Bari.

Hospitalization in the Communications Zone

The inadequacy of medical facilities in the Mediterranean theater was never more obvious than at the start of the bitter and costly campaign in the northern Apennines. In the first days of September 1944, the Italian communications zone was as deficient in bed strength as was Fifth Army. Nine thousand T/O fixed beds were already closed or alerted for closing in Italy for movement to southern France, plus another 4,500 in North Africa, and 750 in Corsica. In Italy the total would be 21,900 under control of the Peninsular Base Section and 3,200 attached to the Army Air Forces. Of the PBS total, more than half were in the Naples-Caserta area, 300 miles from the Fifth Army front, and only 4,000 north of Rome.

The problem thus posed for General Stayer and Colonel Arnest was immeasurably complicated by the necessity of hospitalizing in Italy for an indefinite time the casualties evacuated from southern France. Yet until the hospitals already closed in Italy and Africa could be reestablished in France there was no alternative. For the next two months the Italian communications zone, with 25 percent of its strength already withdrawn, would support two field armies, each engaged in a major campaign. It would support them, moreover, at long range, for the patient load would be too great to permit any substantial number of beds to be closed for movement closer to the front.

Casualties From Southern France

When the first casualties from the amphibious landings in southern France reached Italy on 17 August 1944 there were already some 25,000 patients on hand in PBS hospitals. Between that date and 20 November, an estimated 20,000 patients from France were received in PBS, in addition to Fifth Army casualties and the routine disease and injury cases from among service and replacement troops in Italy.[4]

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[4] Principal sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944; (2) Annual Rpt, Surg, PBS, 1944; (3) ETMD's for Aug–Nov

While a few Seventh Army casualties were flown to Rome, the bulk of the evacuees from southern France went by sea and air to Naples, where they were cared for by the 17th, 37th, 45th, and 300th General Hospitals. Each of these units operated in excess of its Table of Organization capacity during the emergency period, as did most of the PBS hospitals. Fixed hospitals in both Naples and Rome were still receiving thousands of casualties from Fifth Army through September and October at the same time that the Naples hospitals were filled with wounded from southern France and two-thirds of the beds in Rome were in process of moving to northern Italy.[5] The only evacuation from the overcrowded Naples hospitals at this time was to the zone of interior, since there were no longer any beds left in Africa for long-term patients.

Movement of Fixed Hospitals Into Northern Italy

The overloading of PBS hospitals with casualties from southern France and from the Gothic Line was only one of several reasons for the delay in moving fixed beds into northern Italy. Another reason was the difficulty in finding sites for large installations. In the war-torn Arno Valley few buildings were available of sufficient size to house a 1,500-bed or 2,000-bed general hospital; and to set up such an establishment in tents or prefabricated buildings with adequate power, water, drainage, and access roads was a major engineering project. Still another factor was the hope, after the initial success of Fifth Army against the Gothic Line, of a quick breakthrough into the Po Valley. Ground haze in that region made air evacuation impossible in the winter months, and the rail lines had been knocked out by Allied bombing. It was therefore deemed essential to keep at least a minimum of fixed beds mobile for early movement north of the Apennines.[6]

At the beginning of the North Apennines Campaign the 64th General Hospital was at Ardenza, a suburb just south of Leghorn, with the 55th Station Hospital attached, giving the combined installation a T/O capacity of 1,750 beds. The 50th Station Hospital, with 250 beds, was at Castagneto some 40 miles down the coast, and the 24th General, with 1,500 beds, was at Grosseto, another 40 miles farther south and 75 miles from the rearmost Fifth Army installations. Moves made during September were largely readjustments, not involving any of the large hospitals in the Naples or Rome areas.

On 13 September the 154th Station Hospital—the only 150-bed unit in the theater—moved up from the Battipaglia staging area south of Naples to relieve the 105th Station at Civitavecchia. The 105th, with 500 beds, moved on to Grosseto to relieve the 24th General and the latter unit proceeded to Florence, where it opened on 21 September in the extensive plant of a former Italian aeronautics school. By mid-October the hospital was

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1944; (4) Rpts of individual hosps mentioned in text. See also pp. 396–400, above.

[5] See p. 447, above.

[6] Principal sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944; (2) Final Rpt, Plans and Opns Off, MTOUSA, 1945; (3) Annual Rpt, Surg, Fifth Army, 1944, 1945; (4) Med Sitreps, PBS, Sep 44–Jan 45; (5) Theater ETMD's, Sep 1944–Jan 45; (6) Unit rpts of hosps mentioned in text; (7) Unit ETMD's of the hosps mentioned in text, for Sep 44–Jan 45.

operating 2,770 beds on a 1,500-bed T/O.

At the same time the 750-bed 7th Station Hospital, which had been staging in Oran since July, arrived in Leghorn and set up at Tirrenia, a former Fascist youth camp on the seacoast about four miles north of the city. The unit opened on 29 September with the facilities and bed strength of a general hospital. Shortly after its establishment, the 7th Station was designated to hospitalize all Brazilian ground personnel in the area, and by December was caring for 700 Brazilian patients in addition to a full load of U.S. patients. Fifteen medical officers, two dental officers, three pharmacists, a chaplain, 23 nurses, and 32 enlisted technicians, all Brazilian, were attached. Brazilian medical strength at the 7th Station Hospital eventually reached a maximum of 27 officers and 65 enlisted men, though the nurse strength declined to 18.

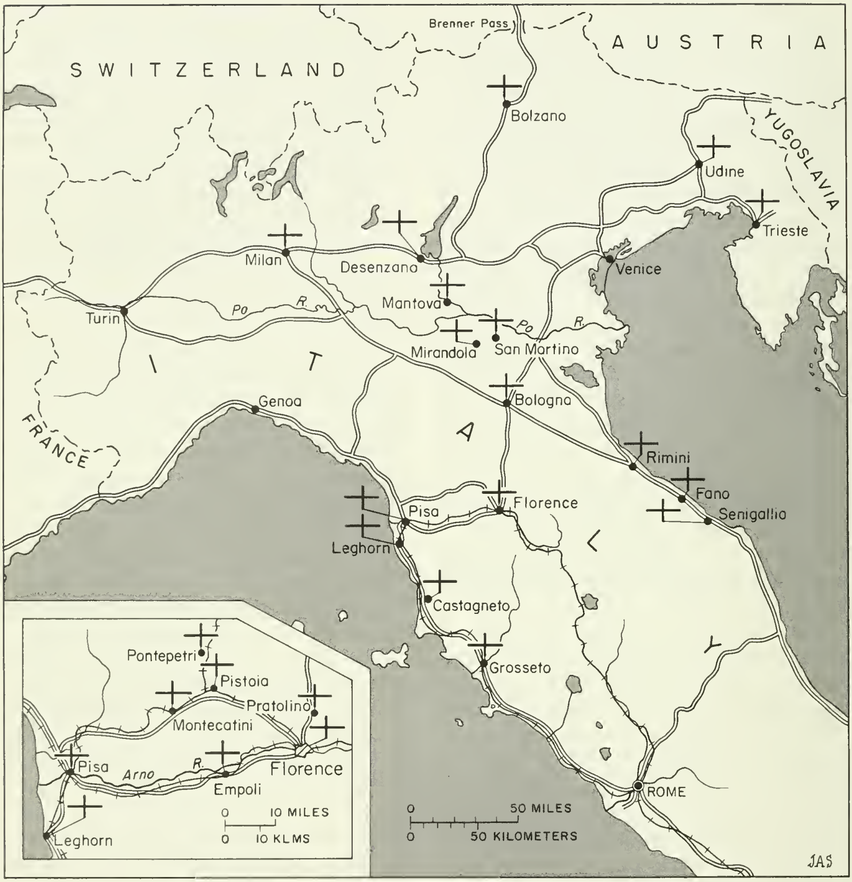
The Brazilians were given wards of their own for routine cases, but those requiring special treatment were placed in the regular medical and surgical wards. Brazilian doctors were assigned to the medical and surgical staffs of the hospital, where they dealt with all patients and worked on teams with U.S. surgeons as well as on surgical teams of their own. In the course of time, as language barriers and differences in practices were overcome, the Brazilians were fully integrated into the hospital staff. Between 7 October and 12 December five Brazilian medical officers and six nurses also served with the 154th Station at Civitavecchia to care for personnel of nearby Brazilian Air Force units.

The only other hospitals to move into northern Italy during September were the 81st Station from Naples and the 114th Station from Rome, but neither move was completed before the end of the month. The 81st closed in Naples on 24 September, and was established adjacent to the 64th General at Ardenza by 1 October. One 250-bed expansion unit was set up immediately, and a second opened shortly in a prisoner of war stockade. The 81st, with the assistance of detached personnel from other units, was thus operating 1,000 beds on a 500-bed T/O.

The 114th Station, which moved into an abandoned Italian military hospital in Leghorn proper, had more difficulty getting established. Extensive repairs were required, and it was 20 October before the hospital was ready to receive patients. The 114th Station continued to serve as the PBS neuropsychiatric hospital, but the shortage of fixed beds made it necessary to take medical cases as well. For the first two months of operation in Leghorn about half of its patients were medical.

The shift of the 114th Station from Rome heralded a general exodus of medical installations from the Italian capital, which was too far in the rear to effectively support the Fifth Army front and lacked the port facilities that made Naples still useful as a hospitalization center. The 33d General Hospital was the first of its class to go, closing on 24 September. A site was located in what was to become the Leghorn hospital center at Tirrenia, where the 7th Station was already in operation, and movement was completed on 7 October. The 33d General opened five days later. (*Map 42*)

The 12th General, one of the two 2,000-bed hospitals remaining in Italy, began closing out in Rome about 1 November, starting the roundabout journey


Brenner Pass
AUSTRIA
SWITZERLAND
Bolzano
YUGOSLAVIA
Udine
Trieste
Milan
Desenzano
Venice
Mantova
Turin
Po R.
Mirandola
San Martino
ITALY
Genoa
FRANCE
Bologna
Rimini
Fano
Senigallia
Pisa
Florence
Leghorn
Castagneto
Grosseto
ROME
0 50 MILES
0 50 KILOMETERS
JAS
Pontepetri
Pistoia
Pratolino
Montecatini
Pisa
Arno R.
Florence
Empoli
Leghorn
0 10 MILES
0 10 KLMS

MAP 42—Fixed Hospitals in Northern Italy, July 1944–October 1947

FIXED HOSPITALS IN NORTHERN ITALY

Grosseto

213th Veterinary General (Italian)[a], 4 July 1944–31 March 1945.

24th General, 21 July–15 September 1944. 1,500 beds.

105th Station, 15 September–24 December 1944. 500 beds.

50th Station[b], Detachment A, 22 December 1944–20 March 1945. 100 beds.

99th Field, 1st Platoon, 20 March–17 July 1945. 100 beds.

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[a] Redesignated 1st Veterinary General Hospital (U.S.-Italian), 31 March 1945.

[b] Redesignated 99th Field Hospital, 20 March 1945.

FIXED HOSPITALS IN NORTHERN ITALY—*Continued*

1st Veterinary General (U.S.-Italian), 31 March–15 July 1945.

Castagneto
- 50th Station, 20 July–22 December 1944. 250 beds.
- 50th Station, Detachment B, 22 December 1944–20 March 1945. 100 beds.
- 99th Field, 2d Platoon, 20 March–13 July 1945. 100 beds.

Leghorn
- 64th General, 8 August 1944–20 December 1945. 1,500 beds.
- 55th Station (Attached 64th General), 9 August–15 October 1944. 250 beds.
- 81st Station, 28 September 1944–20 June 1945. 500 beds.
- 7th Station, 29 September 1944–26 August 1945. 750 beds.
- 33d General, 12 October 1944–20 September 1945. 1,500 beds.
- 114th Station, 20 October 1944–31 May 1945. 500 beds.
- 12th General, 3 December 1944–6 July 1945. 2,000 beds.
- 61st Station, 15 November 1945–15 November 1947. 500 beds.

Senigallia
- 35th Field, 2d Platoon (AAFSC; ABC), 11 November 1944–4 April 1945. 100 beds.
- 60th Station (ABC), 4 April–18 July 1945. 400 beds.
- 4th Field (ABC), 18 July–3 September 1945. 400 beds.

Pisa
- 105th Station, 15 January–25 June 1945. 500 beds.
- 103d Station, 23 March–20 July 1945. 500 beds.
- 55th Station, 25 June–15 November 1945. 250 beds.
- 99th Field, 20 July 1945–1 May 1946. 400 beds.

Empoli
- 50th Station[b], Detachment C, 17 January–20 March 1945. 100 beds.
- 99th Field, 3d Platoon, 20 March–6 August 1945. 100 beds.

Florence
- 24th General, 21 September 1944–1 June 1945. 1,500 beds.
- 103d Station, 11 January–22 March 1945. 500 beds.

Pratolino
- 55th Station, 16 October 1944–21 May 1945. 250 beds.
- 225th Station, 21 May–25 June 1945. 500 beds.
- 70th General, Detachment A, 25 June–1 October 1945. 500 beds.
- 64th General, Detachment A, 1 October–15 November 1945. 250 beds.

Fano
- 225th Station (ABC), 16 April–8 May 1945. 500 beds.

Pistoia
- 70th General, 22 January–25 June 1945. 1,500 beds.

Rimini
- 35th Field, 2d Platoon (ABC), 17 April–24 May 1945. 100 beds.

Montecatini
- 182d Station, 20 April–25 June 1945. 500 beds.
- 70th General, Detachment B. 25 June–25 September 1945. 500 beds.

Pontepetri
- 2605th Veterinary General (Overhead), with 2d Veterinary General (U.S.-Italian) attached, 21 April–2 May 1945.

Bologna
- 74th Station, 27 April–20 June 1945. 500 beds.
- 6th General, 9 May–10 August 1945. 1,500 beds.

Mirandola
- 2605th Veterinary General (Overhead), with 2d Veterinary General (U.S.-Italian) attached, 2 May–28 June 1945.

San Martino
- 2604th Veterinary Station (Overhead), with 1st Veterinary Station (U.S.-Italian) attached, 5–14 May 1945.

Mantova
- 37th General, 9 May–25 October 1945. 1,500 beds.

Milan
- 15th Field[c], 1st Platoon, 1–30 September 1945. 100 beds.

Desenzano
- 15th Field[c], 3d Platoon, 1 September–8 October 1945. 100 beds.

Udine
- 16th Evacuation (as station), 1 September–2 October 1945. 750 beds.
- 15th Field (88th Division), 2 October 1945–13 May 1946. 400 beds.
- 391st Station (88th Division), 11 May 1946–15 October 1947. 400 beds.

Bolzano
- 15th Field[c], 2d Platoon, 1 September–5 October 1945. 100 beds.

Trieste
- 7th Station (88th Division), 1 May–19 September 1947[d]. 200 beds.

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[c] Assigned in place from Fifth Army to PBS, 1 September 1945. Reassigned to 88th Division, 25 September 1945.

[d] Turned over to Trieste-United States Troops (TRUST) 19 September 1947.

12TH GENERAL HOSPITAL, *the largest unit in the group of medical installations in the northern outskirts of Leghorn.*

to Tirrenia in the middle of the month. Four trainloads of equipment went by rail to Naples, and thence to Leghorn by water. Equipment arrived on 25 November, and the first patient was received at at the new site on 3 December. The arrival of the 12th General brought Table of Organization bed capacity in Leghorn to 6,750, or an operating strength of better than 10,000.

The 55th Station, meanwhile, had been relieved of its attachment to the 64th General in the middle of October, and on the 16th of that month opened at Pratolino, six miles north of Florence, in buildings vacated the day before by the 94th Evacuation Hospital. The 74th Station, which had closed at Caiazzo north of Caserta on 25 October and was also scheduled for the Florence area, was less fortunate. Its prospective site was still occupied by the 15th Evacuation, which the Fifth Army surgeon had decided to retain in Florence over the winter. As no alternative site was available, the 74th Station set up headquarters with the 24th General and placed the bulk of its personnel on detached service with other medical units.

Only two more fixed hospitals moved into northern Italy before the launching of the spring drive into the Po Valley. These were the 103d Station, from Naples, which opened in a prisoner of war enclosure in the outskirts of Florence on 11 January 1945; and the 70th Gen-

70TH GENERAL HOSPITAL AT PISTOIA

eral from North Africa, which opened in Pistoia on 22 January.

There were, however, various readjustments in the hospital picture around the end of 1944. In Rome the 73d Station was reassigned to Rome Area, MTOUSA, on 1 December 1944. The 6th General closed on 22 December, but remained in Rome with all equipment packed and ready to move on short notice. Personnel of the hospital were placed on temporary duty with other medical units scattered over Italy. The 34th Station, which had been serving a replacement center in the Caserta area since October, took over the buildings vacated by the 6th General in Rome on 19 January, while the 154th Station closed at Civitavecchia and replaced the larger 34th at Caiazzo.

Late in December the 50th Station at Castagneto reorganized along field hospital lines into three detachments, one of which relieved the 105th Station at Grosseto on 24 December. Another detachment set up a small hospital to serve the 8th Replacement Depot at Empoli, twenty-five miles west of Florence, on 17 January 1945. The third detachment remained at Castagneto. The 105th Station, displaced at Grosseto, moved to Pisa where it opened in buildings of an Italian tuberculosis sanatorium four miles east of the city on 15 January. At its Pisa site, the 105th Station served an encampment of Russians who had been liberated from German prison camps.

Status of Hospitalization in MTOUSA January–March 1945

By January 1945, when the decision was made to postpone the Po Valley offensive until spring, fixed hospitals in MTOUSA were reporting a smaller proportion of beds occupied than ever before. This was in part due to the winter lull in the fighting, but it was also in large measure because of the excellence of the Fifth Army medical service, which was retaining the maximum number of cases in the army area. Fixed bed strength in MTOUSA was nevertheless 6,000 below the authorized 6.6 ratio, and changes in the station hospital T/O had so far reduced the number of medical officers in those units that an expansion of more than 20 percent was no longer practical without additional personnel.[7]

Looking ahead to the resumption of active hostilities in the spring, General Stayer asked the War Department for an additional general hospital of 1,000-bed capacity and for a field hospital for communications zone use. The request was denied on the ground that no such units were available in the zone of interior. The War Department proposed as an alternative that existing hospitals be reorganized into larger units, but the MTOUSA medical section considered this proposal impractical, since there was no specific requirement for station hospitals larger than 500 beds, and sites could not be found for general hospitals larger than the 1,500-bed units already operating in the theater. Any other form of reorganization that would add beds would require more in additional personnel and equipment than could be procured. General Stayer therefore prepared to operate with the hospitals then under his control.

As of the end of January there were 10,150 fixed beds in the Naples-Caserta area. The 37th and 45th General Hospitals, each with 1,500 beds, and the 500-bed 182d and 225th Stations were in the medical center at the Mostra Fairgrounds. In Naples proper were the 1,500-bed 17th General, the 2,000-bed 300th General, and the 52d, 106th, and 118th Station Hospitals, each of 500 beds. The 52d and 118th were both acting general hospitals. The 52d was also the theater maxillofacial center. Outside Naples the 262d Station was at Aversa, functioning primarily as a prisoner-of-war hospital; the 32d Station was at Caserta, serving headquarters personnel of MTOUSA and AFHQ; and the 154th Station was at Caiazzo serving a replacement center.

The 34th and 73d Station Hospitals were in Rome, housing 750 beds between them. The 1,500 beds of the 6th General were in that city but not available for use, since they were packed for movement.

In the Arno Valley, overlapping the army area, there were 11,000 beds—6,750 of them at Leghorn, 2,250 in the immediate vicinity of Florence, 500 at Pisa, and 1,500 at Pistoia. In addition to these, the 50th Station Hospital was operating detachments of approximately 100 beds each at Grosseto, Castagneto, and Em-

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[7] Principal sources for this section are: (1) Final Rpt, Plans and Opns Off, MTOUSA, 1945; (2) Med Sitreps, PBS, Jan–Mar 45; (3) Annual Rpt, Surg, NORBS, 1945; (4) Annual Rpt, Surg, MBS, 1944; (5) Med Hist, AAFSC MTO, 1945; (6) Theater ETMD's, Jan–Mar 1945; (7) Unit rpts of hospitals mentioned in text; (8) Unit ETMD's of hosps mentioned in text.

Italian Partisans Resting in 26th General Hospital at Bari

poli; and the 500 beds of the 74th Station were inoperative in Florence.

The 1,500-bed 26th General Hospital, still attached to the Army Air Forces Service Command, cared for Air Forces personnel at Bari, and the 500-bed 61st Station performed similar duties at Foggia. In addition to these, the Air Forces controlled three field hospitals, the 4th, 34th, and 35th, which were dispersed along the Adriatic from Lecce in the heel of Italy to Senigallia in the latitude of Florence. Each field hospital platoon served one to five airfields, which had personnel complements of three thousand to ten thousand. All of these hospitals passed to the Adriatic Base Command on 1 March.

In the Northern Base Section the 500-bed 60th Station Hospital, which had moved up from Sardinia the end of October, was preparing to close near Bastia. The 40th Station was operating sections at Cervione and Ghisonaccia, both on the east coast of Corsica, and a third section was preparing to relieve the 60th at Bastia.

In North Africa, which was scheduled for transfer to the Africa-Middle East theater the first of March, the 250 beds of the 57th Station Hospital were more than enough to serve the Tunis area. The last Army hospital in the Oran area, the 54th Station, had closed late in December and was now inoperative in Naples, leaving Naval Hospital No. 9 to care for all U.S. personnel in Oran. The 56th Station at Casablanca, in addition to caring for personnel in the area, was operating a transient section of 100–150 beds for domiciliary care of patients en route to the ZI from Italy, the middle East, and the China-Burma-India theater. It also supervised the operation of a 75-bed Italian station hospital. The 25-bed 370th Station at Marrakech continued to serve primarily Air Forces units. The Italian and German prisoner of war hospitals near Oran were already alerted for movement to Italy.

Preparatory to closing out in Africa, Stayer requested permission to inactivate the 54th Station and reduce the 57th Station to 150 beds, the personnel and equipment thus released to be activated as a 400-bed evacuation hospital for Fifth Army. At the same time permission was requested to convert the 50th Station Hospital in Italy into a field unit. Both requests were granted late in February. On 20 March, accordingly, the 171st Evacuation Hospital was activated and assigned to Fifth Army. On the same date the 50th Station Hospital passed out of existence, and the 99th Field Hospital relieved it in place. No changes were involved, since the 50th Station had already completed its conversion to a field hospital T/O.

The actual transfer to the Africa–Middle East Theater thus involved only 425 U.S. beds, and these were more than made up by the transfer of the 500-bed 21st Station Hospital from the Persian Gulf Command to MTOUSA. The 21st arrived in Naples in March, but did not get into operation until mid-April. In the inactivation of the 54th Station and reduction of the 57th, MTOUSA lost 350 beds, but gained 150 in the conversion of the 250-bed 50th Station to a 400-bed field. All in all, MTOUSA lost 125 beds, while Fifth Army gained 400.

Shortly before the new theater boundaries became effective on 1 March 1945, the two prisoner of war hospitals serving MTOUSA were shifted to northern Italy. There were, of course, many station hospitals treating captured enemy troops, but only two were fully staffed by protected personnel and formally organized as prisoner of war rather than U.S. Army hospitals. These were the 7029th Station Hospital (Italian) and the 131st Station Hospital (German), the latter so designated because it was sited at POW Enclosure No. 131. The 7029th moved by echelons to Leghorn in January and February, finally opening in Pisa on 6 March. Later in the month the German unit took over the prisoner of war hospital being operated by the 103d Station at POW Enclosure 334 in the outskirts of Florence, and was thereafter known as the 334th Station Hospital (German).

The 103d Station, relieved of its POW assignment, moved to Pisa on 22 March, where it became a contagious disease hospital, primarily for Brazilian personnel.

As of the end of March, aggregate Table of Organization bed strength of U.S. base hospitals in the Mediterranean Theater of Operations, including 3,000 beds not operating, was 29,000. Troop strength was 497,427, giving a ratio of 5.8 T/O beds per 100 troops.

Support of the Po Valley Campaign

The experience of Fifth Army in evacuating casualties across the rugged northern Apennines underlined the importance of getting fixed beds into the Po Valley with the greatest possible speed. The 6th General Hospital at Rome and the 74th Station at Florence were already on a stand-by basis for quick movement but more beds were certain to be required. Because of its obvious advantages, General Stayer planned to keep the Naples medical center intact, though hospitals from other parts of the city were shifting northward. General Joseph T. McNarney, the theater commander, had other plans, and in March, despite Stayer's protests, the Mostra Fairgrounds were turned over to the Replacement Training Command. The 45th General Hospital was to remain to care for the replacement center personnel, but the other units then comprising the medical center were required to vacate the fairgrounds as soon as possible. It was these hospitals, therefore, that were alerted for movement to northern Italy.[8]

The first moves in support of the coming campaign were made in response to an indicated need for more fixed beds on the Adriatic side of the peninsula, where Air Forces units were becoming increasingly active and to which air evacuation of ground troops from the Bologna area might be directed should weather conditions preclude the use of more westerly routes. A platoon of the 35th Field Hospital had been in Senigallia since November 1944. This unit was replaced early in April by the 60th Station Hospital from Corsica, the field hospital platoon moving on to Rimini. At the same time the 225th Station in the Naples medical center was assigned to the Adriatic Base Command and shifted to Fano, about fifteen miles farther north.

Next to leave the medical center was the 182d Station, which took no new patients after 25 March. The 182d moved on 10 April to a large villa about two miles northwest of Montecatini. Its first patients were received from Fifth Army evacuation hospitals on 20 April, and within two weeks it was operating 20 percent in excess of its 500-bed T/O capacity.

The 37th General Hospital began closing out on 10 April, moving by echelon to a staging area near Pisa. The bulk of the personnel and equipment was in Pisa by 17 April. For the next two weeks officers and enlisted men were on detached service with other units, but subject to immediate recall. The 37th also operated a 200-bed prisoner-of-war hospital in an unused mess building on an emergency basis, since the 103d Station, which had been reconverted to a prisoner-of-war hospital in mid-April, was unable to carry the full load. By the end of the month prisoners were arriving in the area at the rate of 15,000 a day, and the 103d was operating at more than double its T/O capacity.

By the time the Fifth Army spearheads had fought their way into the Po Valley, there were thus 3,500 fixed beds on a stand-by basis, packed and ready to move forward in support of the ground forces. Movement orders were not long in coming.

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[8] Principal sources for this section are: (1) Final Rpt, Plans and Opns Off, MTOUSA, 1945; (2) Med Hist, AAFSC MTO, 1945; (3) Med Sitreps, PBS, Mar–May 45; (4) Theater ETMD's, Mar–May 45; (5) Unit rpts of hosps mentioned in the text; (6) Unit ETMD's for hosps mentioned in the text, Mar–May 45.

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LOADING EQUIPMENT OF THE 37TH GENERAL HOSPITAL *on freight cars at Naples for shipment to Pisa.*

The 74th Station Hospital was in Bologna by the afternoon of 26 April, five days after the fall of the city, and was taking patients within twenty hours of its arrival. By 28 April 750 beds were set up, and German medical officers and corpsmen had been pressed into service to help with the prisoner patients. The 6th General was close behind, leaving its Rome bivouac on 30 April and opening in Bologna on 9 May. The 37th General sent an advance detail to Mantova on 2 May, and a week later took over 26 Allied and 1,278 German patients from the 15th Evacuation Hospital. By the end of the week the 37th General had more than 2,000 beds in operation. The sudden end of the war made it unnecessary to relocate any other fixed hospitals.

Also in support of the Po Valley Campaign, though on a different level, was the 40th Station Hospital, transferred from Corsica to the vicinity of Rome, where a center for the conversion of able-bodied men from service units into infantry, to help fill the depleted ranks of Fifth Army, had been set up in January.

By the middle of May, with the war in

Europe over, the period of readjustment had set in. For the Medical Department in Italy, the emphasis for the next few months would be on caring for the sick and wounded among prisoners of war, and preparing hospitals and other medical units for redeployment to the Pacific or for return to the zone of interior as promptly as possible.

Problems and Policies

Throughout the period of the North Apennines and Po Valley Campaigns until the end of April 1945, Peninsular Base Section hospitals, including the 26th General attached to the Army Air Forces Service Command and later assigned to the Adriatic Base Command, operated on a 120-day evacuation policy. The theater was too short of manpower to return men to the zone of interior as long as there was any prospect of recovery for further combat duty. Even those reclassified by hospital disposition boards for limited assignment were retained in the theater in a variety of noncombat capacities.[9]

One of the places where limited assignment personnel could be used effectively was in the base hospitals. When Fifth Army was unable to obtain replacements for the heavy casualties suffered in the northern Apennines, all service units in the theater were surveyed with a view to locating able-bodied men who could be released and retrained for combat. The essential consideration was that the men must be taken from positions classified as suitable for limited-assignment personnel. While communications zone hospitals usually had a certain number of limited-service men already on their rolls, the survey revealed many more hospital positions that could be filled by such personnel.

Although many problems were thus created for hospital commanders, the change-over was accepted as a necessary expedient. The new men were for the most part inexperienced in hospital work and had to be given special training on the job. There were, moreover, too many high-ranking noncommissioned officers among them to be absorbed without jeopardizing promotions and damaging the morale of the regular Medical Department enlisted staff. During the last two months of 1944 and the first two months of 1945, limited-assignment personnel nevertheless replaced general-assignment men in station and general hospitals to the extent of an average 25 percent of the enlisted strength. Fortunately, the shift took place at a time when the hospitals were not overloaded and in most instances worked out satisfactorily.

Supplementary personnel were necessary in the operation of all PBS hospitals during periods of emergency expansion. Medical officers, nurses, and enlisted technicians from temporarily inoperative units were freely used whenever they were available, but the greater reliance had of necessity to be placed on Italian civilians and Italian service troops. Among the areas in which civilian and Italian prisoner of war labor was effectively used were sanitary, utility, mess, laundry, supply, motor pool, and common labor details.

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[9] Sources for this section are: (1) Final Rpt, Plans and Opns Off, MTOUSA, 1945; (2) Med Hist, AAFSC MTO, 1945; (3) Ltr, Munly, Med Insp, to Surg, MTOUSA, 26 Nov 44, Sub: Utilization of Limited Assignment Personnel in Hosps; (4) Unit rpts of MTOUSA hosps, 1944, 1945.

Evacuation

In a theater such as the Mediterranean, where bed strength was always below authorized levels, continuous evacuation both to the zone of interior and within the theater itself was essential.

Transfers Within the Theater

Patients were shifted from one fixed hospital to another within the theater to accomplish two major purposes. One purpose was to take advantage of specialized facilities not available in all MTOUSA hospitals. The other was to release beds, either to make room for an influx of new casualties in hospitals closest to the combat area or to prepare a hospital for movement. The lines of movement were well established by September 1944, with Naples the terminus of most of them.[10]

French patients remaining in PBS hospitals continued to be evacuated from Naples to North Africa through November, but their numbers were small: 592 in September, 55 in October, and 76 in November. For U.S. patients, the line of evacuation ran in the other direction, cases requiring more than station hospital care being flown from Africa to Naples. Again, however, the number was small. All evacuation from Corsica was to Italy, the bulk of it by air, but only 343 patients, of whom 279 were U.S. personnel, were so evacuated between 1 September 1944 and the closing out of the Northern Base Section on 25 May 1945. Air Forces patients from eastern Italy who required more specialized care than was available at the 26th General Hospital were evacuated to Naples. Naples was also the first stop for Air Forces patients en route to the zone of interior.

Of much greater proportions was the periodic transfer of patients from PBS hospitals in Rome and northern Italy. In September, despite heavy rains that made rail lines intermittently unusable, the 41st Hospital Train carried 38 patients from Grosseto and 735 from Rome to Naples, in addition to clearing 275 patients from Grosseto to Rome when the 24th General Hospital was preparing to move forward. The movement of substantial numbers from Rome to Naples by both rail and air continued through December as 5,500 beds in Rome were closed out for transfer to northern Italy.

Similarly, until adequate bed strength was built up in Leghorn patients from the 24th General Hospital in Florence and from the 55th Station at Pratolino were transferred, often as rapidly as they became transportable, to the Naples area, along with patients direct from Fifth Army hospitals. When air evacuation was interrupted by bad weather in October, the 24th General was cleared by 60 ambulances of the 162d Medical Battalion, which carried patients to Leghorn.

As the hospital facilities in Leghorn reached their maximum late in 1944, regular transfer of patients to Leghorn from Florence and later from Pistoia began. Direct air and rail evacuation be-

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[10] Sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944; (2) Final Rpt, Plans and Opns Off, MTOUSA, 1945; (3) Annual Rpt, Surg, PBS, 1944; (4) Med Sitreps, PBS, Jan–May 45; (5) Annual Rpt, Surg, NORBS, 1944, 1945; (6) Med Hist, AAFSC MTO, 1944, 1945; (7) Theater ETMD's, Sep 44–May 45; (8) Unit Rpts, 41st Hospital Train; 51st and 162d Med Bns; 802d and 807th MAETS.

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Covered Ramp to Hospital Ship Facilitated Loading of Patients, Leghorn

tween Florence and Leghorn were inaugurated in February 1945, and thereafter patients were moved at the rate of more than a thousand a month.

From Leghorn evacuation to Naples was primarily by hospital ship and transport but the repair of rail lines made it possible to use hospital trains in an emergency. Such an emergency arose in the last days of December 1944 when it was feared that the German thrust into the Serchio Valley might develop into a major counteroffensive comparable to the Ardennes breakthrough, which had not yet been stopped. Should the German drive gain momentum, Leghorn would be its probable objective, and a hasty evacuation of all fixed hospitals in that city was ordered. In late December and early January more than 1,300 patients were sent back to Naples by water and close to 600 by rail. In the same time period, air evacuation from Florence to Naples accounted for another 2,500.

The threat of an Italian "Battle of the Bulge" was over by mid-January, and evacuation assumed what was to be a normal pattern for the next two months. PBS hospitals in Florence, Pistoia, and Pisa received casualties from Fifth Army and kept beds free by evacuation to Leghorn. Bed strength in Leghorn was adequate to care for all patients with a hospital expectancy of less than 120 days, so that after 1 February only those en route to the zone of interior were sent on to Naples. This pattern continued until the latter part of March, when all PBS hospitals in the northern sector were again cleared to Naples to provide beds for the casualties anticipated in the spring offensive. During April approximately 1,800 patients were transferred by sea and air from Leghorn to Naples, but these were more than balanced by 2,000 patients brought to Leghorn from Florence.

All movements of hospital ships within the Mediterranean area, including those used to evacuate patients from southern France, remained under control of Allied Force Headquarters. In order to make the greatest possible use of the limited number of vessels available, an arrangement was worked out in October 1944 whereby all hospital ships entering the Mediterranean called first at Oran, which was roughly equidistant from Naples, Leghorn, and Marseille. From Oran the Chief of Transportation, AFHQ, directed the vessels to the port most in need of them. The movement of the hospital ship platoons that formed the medical complements of troop transports used for evacuation was also directed by AFHQ in order to ensure maximum use of transports for this purpose.

As the time approached for the transfer of southern France to the European theater, a plan of evacuation was drawn up by embodying the existing principle of a pool of hospital ships under AFHQ control and incorporating procedures for requesting vessels. Base section commanders were to be responsible for making the greatest possible use of troop transports, but AFHQ was to be notified of the movements of such vessels and would continue to control the assignment of hospital ship platoons arriving anywhere in the Mediterranean. Evacuation by air was to be controlled by each theater, but AFHQ was to be notified of all airlifts to the ZI from southern France as a guide to the allocation of alternative means of transportation. General Stayer presented this plan to Maj. Gen. Paul R. Hawley, Chief Surgeon of the European Theater, early in November, and Hawley accepted it subject to further study. It remained in effect by agreement between the two theaters until February 1945 when, with minor modifications, it was ratified by the War Department. The plan continued in operation until the end of June.

Evacuation to the Zone of Interior

Evacuation to the zone of interior throughout the period of concentration in Italy was by plane, hospital ship, and troop transport. Until the end of February 1945, when North Africa was finally divorced from the Mediterranean Theater of Operations, a small number of patients continued to be moved to the zone of interior from Oran and Casablanca, but the overwhelming bulk of the lifts by all types of carrier was from Naples.[11]

During the 3-month period that southern France remained under AFHQ control, most of the casualties from that area also were routed to the continental United States by way of Naples. In October, however, direct evacuation to the zone of interior began from Marseille, and some 250 patients had been evacuated to the ZI from that port before 20

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[11] Principal sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944; (2) Final Rpt, Plans and Opns Off, MTOUSA, 1945; (3) Annual Rpt, Surg, PBS, 1944; (4) Med Sitreps, PBS, Jan–May 45; (5) ETMD's for Sep 44–May 45.

TABLE 34—EVACUATION FROM MTOUST TO THE ZONE OF INTERIOR
SEPTEMBER 1944–APRIL 1945

Month and Year	U.S. Army			Other U.S.	POW's	Brazilians	Total
	By Sea	By Air	Total				
Total........	19,156	4,086	23,242	557	2,565	600	26,964
1944							
September..........	4,390	868	5,258	171	785	11	6,225
October............	2,443	840	3,283	97	1,780	11	5,171
November..........	2,655	555	3,210	68	....	18	3,296
December..........	3,293	447	3,740	126	....	91	3,957
1945							
January............	1,963	275	2,238	21	....	63	2,322
February...........	1,453	331	1,784	22	....	131	1,937
March..............	1,470	498	1,968	18	....	94	2,080
April...............	1,489	272	1,761	34	....	181	1,976

Source: (1) Annual Rpt, Surg, MTOUSA, 1944, an. B, apps. 21, 22. (2) Final Rpt, Plans and Opns Off, MTOUSA, 1945, apps. 14, 15.

November when the area was absorbed by ETO. These and all patients subsequently sent to the United States from Delta Base were evacuated in accordance with the intertheater agreement described above.

September and October of 1944 were the heaviest months of the war for evacuation to the zone of interior, primarily because of the large influx of casualties from Seventh Army. With a limited and definitely inadequate number of fixed beds available in MTOUSA, only large-scale evacuation to the United States would permit the Medical Department to carry out its mission. By the end of the year, with bed occupancy at its lowest level of the war, evacuation to the zone of interior from the Mediterranean theater declined sharply. (*Table 34*)

Evacuation of Brazilian casualties to their homeland began in September 1944 by air. In December a Brazilian flight surgeon and four flight nurses reached the theater to study U.S. methods before taking over responsibility for their own patients in flight. Evacuation of Brazilian casualties by sea was for the most part by way of the United States, since there were never enough to justify diversion of a hospital ship. The only exception was in January 1945 when an unescorted troop transport sailed direct to Brazil from Naples. (*Table 35*)

No prisoner of war patients were evacuated to the United States after October 1944, but 135 German patients in U.S. custody were repatriated from Naples and 454 from Oran in January 1945. The prisoners were carried by hospital ship to

TABLE 35—EVACUATION OF BRAZILIAN PATIENTS TO BRAZIL
SEPTEMBER 1944–APRIL 1945

Month	By Air to Brazil	By Sea		Total
		Direct	Via U.S.	
Total	307	59	234	600
1944				
September	11	....	....	11
October	11	....	....	11
November	17	....	1	18
December	7	....	84	91
1945				
January	....	59	4	63
February	56	....	75	131
March	74	....	20	94
April	131	....	50	181

Source: Compiled from ETMD'S for Jan–Apr 45.

Marseille, where they were transferred to a Swiss-manned hospital train and exchanged at the Swiss border for U.S. prisoners of the Reich.[12] Since the collapse of Germany was imminent, another exchange of prisoners scheduled for April was not carried out.

Medical Supplies and Equipment

Theater Supply Organization and Policies

The reorganization of November 1944 brought the operation of the medical supply system directly under the theater surgeon for the first time, but neither the internal organization of the Medical Supply Branch (redesignated Medical Supply Section) nor the operating procedures were altered in any essential particular. In keeping with the reduced staff available, the organization was made more compact, but without significant change in functions. In the new alignment, an Executive Group reviewed proposed changes in Tables of Equipment, checked the quality of equipment in the field, prepared plans and estimated requirements in terms of disease trends and military operations, screened requisitions from Allied nations, and advised on civilian supply for occupied territories. A Shipping Control Group kept constant track of all incoming shipments and prepared shipping orders for movement of medical supplies between base sections. A Stock Control Group maintained records of stocks on hand, computed replacement factors, studied issue and due records to determine shortages and excesses, and recommended stock movements to correct maladjustments. A Reports and Statistics Group completed the supply organization.[13]

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[12] (1) Memo and attachments, Biederman to Stayer, 14 Jan 45 sub: Arrangements for Repatriation of Allied and German POW's and Exchange of Civilians. (2) Ltr, Lt Col W. L. Hays combined British-American Repatriation Committee, to CG ETO, 1 Mar 45. Figures from ETMD for Jan 1945.

At the time of the reorganization, medical supply levels were established at 30 days' minimum, 30 days' operating, and 60 days' maximum for most items. In accordance with War Department instructions, these levels were kept under continuous review with a view to possible reductions. The only move in that direction, however, came to nothing. In March 1945 a recommendation by the theater supply officer that the 90-day stock level maintained by base hospitals be reduced to 60 days, to conform to the theater level, was rejected by General Stayer as hazardous. In the light of a detailed study begun in November 1944 of 40 medical items, which showed that the actual elapsed time between preparation of monthly requisitions on the zone of interior and the tallying of items into depot stock was 149 days, Stayer was undoubtedly correct.

After southern France ceased to be a drain on the MTOUSA supply services, medical stock levels built up rapidly. Low battle casualty and disease rates during the winter of 1944–45 were contributing factors, as also were the closing out of the North African bases and a revised accounting procedure that included Fifth Army and Air Forces stocks in computing the theater levels. Surpluses developed of sufficient magnitude in some items to justify the return of 500 tons of medical supplies to the zone of interior in January.

In line with the achievement of a comfortable stock level for the theater, surgeons of major commands and base sections were authorized in February to modify equipment lists in accordance with such policies as might be laid down by the MTOUSA surgeon. In effect, hospitals were permitted to requisition various items in excess of the Tables of Equipment if those items would make operations more effective. Authority to issue expansion units, which rested with the commanding generals of the base sections, automatically carried with it the issue of such additional equipment as might be necessary to the efficient operation of the unit.

After November 1944 all incoming supplies were received at Naples or Leghorn, where the Peninsular Base Section depots were located, and PBS was made responsible for distribution to other base sections on requisitions that were passed through the MTOUSA medical supply section. All forms of transportation were used, the size of the shipment, the speed necessary, and the destination being the determining factors, along with availability. Within the theater, biologicals were uniformly moved by air. In February the Leghorn depot became the main medical supply point for the theater.

Repair and maintenance of medical equipment steadily improved during the late months of 1944, reaching a peak of efficiency early in 1945 as Fifth Army units began re-equipping for the spring offensive. A spare parts catalog compiled and distributed by the Medical Supply Section became the basis for requisitioning and for restocking depots. The fifth echelon repair shop, the optical repair

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[13] Principal sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944, an. K; (2) Davidson, Med Supply in MTOUSA, pp. 113–139. For operating procedures, see pp. 346–47, above.

PORTION OF THE PBS MEDICAL STORAGE AREA

shop, and theater stocks of spare parts and of artificial teeth were all transferred to the Leghorn depot in January.

Local procurement remained, as it had been throughout the Mediterranean campaigns, a negligible factor, but the distribution of medical supplies for civilian use continued to mount in proportion to the extent of territory occupied. After September 1944, Army responsibility for procurement, storage, and issue of medical supplies for civilians throughout the theater was carried out through a Central Civilian Medical Depot in Naples.

Civilians and Italian service troops were freely used as laborers, mess attendants, artisans, and for guard details at medical supply depots. So many of the supply functions were specialized, however, that the maximum use of such personnel did not appreciably lessen the requirement for U.S. service troops for medical supply operations in the Italian communications zone.

Medical Supply in the Base Sections

Medical supply in the base sections

came under control of the MTOUSA medical section with the reorganization of November 1944, but here, as in the Medical Supply Section itself, no essential change of function or organization was involved. The Peninsular Base Section, already dominant in the theater, continued to grow through the last quarter of 1944 and the early months of 1945 as other base sections declined.

Mediterranean Base Section—Following the mass transfer of medical facilities from North Africa to southern France and Italy, plans were made for closing out remaining depot stocks in the Mediterranean Base Section. The 60th Medical Base Depot Company, which had been responsible for receipt, storage, and issue of all medical supplies in North Africa since the beginning of September, began transferring supplies to other bases almost immediately, shipping out 250 tons a week during September and October. Simultaneously, the Eastern and Atlantic Base Sections transferred their own surpluses, brought about by diminished troop strength, to the MBS depot, in preparation for the consolidation of the three base sections on 15 November.[14]

When the MBS depot closed in mid-December, the 57th Station Hospital at Tunis was given maintenance stocks sufficient to carry through 28 February, when the transfer of North Africa to AMET would be effected; a minimum reserve of 25 tons was left with the 54th Station, which was about to close at Oran; and the balance of maintenance stocks for the base section was stored with the 56th Station Hospital at Casablanca, the new MBS headquarters. Excess stocks to the amount of 313 tons were returned to the zone of interior, and 350 tons were divided between Italy and southern France. A small detachment of the 60th Medical Base Depot Company remained in Oran long enough to complete the packaging and shipment. From the supply standpoint, MBS was closed by the end of 1944.

Northern Base Section—Medical supply in the Northern Base Section remained in the hands of a detachment of the 684th Quartermaster Base Depot Company, which had been activated late in May from personnel of the old 2d Medical Depot Company. Until the end of September, the group operated depots at Ajaccio and Cervione, but the reduction of troop strength and gradual withdrawal of medical units from Corsica made it possible to consolidate the two depots at Cervione early in October. Movement of supplies from Ajaccio across the island by truck was completed by the 13th of the month.[15]

For a time, portions of the depot stock at Cervione had to be stored in the open, but the transfer of stocks in excess of a 4-month level to other MTOUSA bases, which began in mid-October, soon reduced quantities on hand to proportions that could be warehoused.

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[14] Sources for this section are: (1) Annual Rpt, Surg, MBS, 1944; (2) Annual Rpt, 60th Med Base Depot Co, 1944; (3) Annual Rpt, Surg, MTOUSA, 1944, an. K; (4) Davidson, Medical Supply in MTOUSA.

[15] Sources for this section are: (1) Annual Rpts, Surg, NORBS 1944, 1945; (2) Annual Rpt, 684th QM Base Depot Co, 1944; (3) Per Rpt, 80th Med Base Depot Co, 11 Jul 45. (4) Davidson, Med Supply.

In line with the general reduction of functions in NORBS, 14 enlisted men of the 684th Quartermaster Base Depot Company detachment were transferred to the 60th Medical Base Depot Company, then still functioning at Oran, on 16 October. The subsequent transfer of the detachment's commanding officer to Headquarters, NORBS, left only an officer and 17 enlisted men to operate the Cervione depot, with the aid of some 25 Yugoslavs who made up labor and guard details. There were times when the workday stretched out to 18 and even to 24 hours, yet despite the physical strain, none of the men could ever be spared long enough to take advantage of the rest camps available on the island.

NORBS depot stocks were down to 230 tons by the end of January and to 75 tons by late March. By way of preparation for closing out the base section supply activities, all personnel of the depot were transferred on 21 March to the 80th Medical Base Depot Company, at that time assigned to the Adriatic Base Command, but were left on detached service with NORBS long enough to wind up operations. The depot was scheduled for closing on 15 April, but so critical was the need for personnel in Italy, where the Po Valley Campaign was about to be launched, that all tonnage was packed for shipment by 6 April. The detachment left Corsica on 10 April, turning over to the 40th Station Hospital responsibility for procuring and issuing such medical supplies as might still be required.

Adriatic Base Command—Before 1 March 1945, medical supply for Air Forces units and hospitals serving Air Forces personnel in eastern Italy was the responsibility of the Army Air Forces Service Command, which dealt directly with the Surgeon, MTOUSA, and procured medical items peculiar to the Air Forces direct from the zone of interior. The function was carried out through a number of aviation medical supply platoons, two of which operated in Bari as the medical supply section of the Adriatic Depot. Others served airfields from Tunis to southern France, with major dumps at Naples and Pisa.[16]

When the Adriatic Base Command was activated on 1 March 1945, the new organization took over the supply functions previously exercised by the Army Air Forces Service Command, Mediterranean Theater of Operations (AAFSC MTO), through the Adriatic Depot, but without altering the operating responsibilities of the aviation medical supply platoons. The 80th Medical Base Depot Company, which had been activated in December and since that time had shared in the operation of the PBS Leghorn depot, was assigned to ABC in mid-March and shifted to Senigallia, where for a month it operated the ABC advance depot. The rapid development of the Po Valley Campaign, however, left hospitals in the Fano-Senigallia-Ancona area with few patients and a minimum of supply activity. The ABC advance depot was turned over to the detachment from Corsica on 19 April, and a week later the main body of the 80th Medical Base Depot Company went to Bari, where it took over operation of the main ABC medical depot.

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[16] Sources for this section are: (1) Med Hist, AAFSC MTO, 1944, 1945; (2) Periodic Rpt, 80th Med Base Depot Co, 11 Jul 45; (3) Med Sitreps, Adriatic Base Commd, Mar–May 45; (4) MS, Adriatic Depot Hist, OCMH files; (5) Davidson, Med Supply in MTOUSA.

Peninsular Base Section—The medical supply service of the Peninsular Base Section had been organized in the middle of August 1944 to place operating control in the hands of the 232d Medical Composite Battalion. As of 1 September this battalion had attached to it the 72d and 73d Medical Base Depot Companies and the 684th Quartermaster Base Depot Company. The 72d was operating the main medical supply dump at Naples, the 684th the forward base at Piombino, with a detachment on Corsica. The 73d shared operation of the Piombino dump and had an advance party setting up a new supply base in Leghorn. By the end of September the Leghorn dump boasted 510 tons of medical supplies, housed in a large warehouse with 53,550 square feet of floor space. Another 70,000 square feet were available for open storage when needed.[17]

The Piombino dump was closed on 14 October and all stocks remaining were shifted to Leghorn, which was being built up to supply all Fifth Army needs. The problem remained, however, of distributing supplies economically between Leghorn and Naples. Every effort was made to keep balanced stocks at both depots. Transfers between the two were slow, because material arriving from the zone of interior had to be tallied in at the receiving depot before any of it could be transshipped to the other. This usually took two weeks with another week for rail transportation or three weeks for shipment by water. Through the fall of 1944, emergency shipments had to be made from Naples by truck convoy to meet Fifth Army shortages. An express truck service between Naples and Leghorn was instituted in January 1945, aiding materially in the prompt transfer of less than carload shipments.

During November all ZI shipments were received at Leghorn, and inventories at that base built up rapidly. When Naples was reinstated as a port of discharge in December, a new procedure was worked out under which the PBS supply section studied the manifests of incoming vessels and prepared requisitions covering the entire cargo in advance. Distribution to the two depots was then made directly from the dockside, thus eliminating the delay entailed in transporting all stock to the depot at the port of discharge, picking it up on stock record, and reporting it on the monthly inventory report before any interdepot transfers took place. Under the new system each depot submitted a separate inventory report, the two being consolidated by the Supply Branch of the MTOUSA medical section. The Leghorn stocks were almost as large as those in Naples by the end of the year, and were better balanced since the Naples inventory was padded by substantial quantities of surplus items received from MBS and NORBS.

With the transfer of PBS headquarters to Leghorn in November and the steady growth of the Leghorn supply depot, it became necessary to redistribute supply personnel. The 80th Medical Base Depot

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[17] Principal sources for this section are (1) Annual Rpt, Surg, PBS, 1944; (2) Med Sitreps, PBS, Sep 44–Apr 45; (3) Annual Rpt, 232d Med Serv Bn, 1944; (4) Unit Hist, 72d Med Base Depot Co, Jan–Jun 45; (5) Hist Rpt, 73d Med Base Depot Co, Sep 44. (6) Med Hist Data, 73d Med Base Depot Co, 19 Oct 44; (7) Annual Rpt, 80th Med Base Depot Co, 1944; (8) Periodic Rpt, 80th Med Base Depot Co, 11 Jul 43; (9) Annual Rpt, 60th Med Base Depot Co, 1944; (10) Annual Rpt, 684th QM Base Depot Co, 1944; (11) Davidson, Med Supply in MTOUSA.

TABLE 36—MEDICAL SUPPLIES ON HAND IN PBS DEPOTS
SEPTEMBER 1944–APRIL 1945

Month and Year	Tonnage on Hand Last Day of Month			
	Naples	Piombino	Leghorn	Total
1944				
September	4,934	454	510	5,898
October	4,481	....	1,731	6,212
November	3,880	....	2,526	6,406
December	3,743	....	3,455	7,198
1945				
January	4,244	....	3,748	7,992
February	4,444	....	3,911	8,355
March	4,479	....	4,541	9,020
April	4,649	....	4,496	9,145

Source: (1) Annual Rpt, Surg, PBS, 1944. (2) Med Sitreps, PBS, Jan-Apr 45.

Company was activated at Leghorn on 4 December 1944, with a cadre drawn from the 684th Quartermaster Base Depot Company. A week later the 232d Medical Service Battalion, as the 232d Medical Composite Battalion had been redesignated without change of T/O on 21 November, moved its own headquarters to Leghorn, leaving 45 enlisted men on detached service with the 72d Medical Base Depot Company in Naples. The 60th Medical Base Depot Company was also assigned to PBS when its work in North Africa was completed the middle of December, and arrived in Leghorn in the closing days of the month. Like the 72d, 73d, and 80th Medical Base Depot Companies, and the 684th Quartermaster Base Depot Company, the 60th was attached to the 232d Medical Service Battalion.

The build-up of stocks in Leghorn halted abruptly late in December, when a German breakthrough was feared, but resumed in February. In March Leghorn tonnage, for the first and only time during active hostilities, exceeded that at Naples. (*Table 36*)

Except for temporary shortages in a few items, the Peninsular Base Section medical supply depots were able throughout the North Apennines and Po Valley Campaigns to meet all the needs of Fifth Army, of medical installations assigned to the base section, and, after November 1944, of the theater. Blankets were a critical item through most of December and all of January. Stocks of laundry soap were exhausted at Leghorn early in February, but advances from quartermaster stocks tided the depots over the crisis. In late January and early February PBS was unable to fill Fifth Army orders for acetone, acetic acid with caffeine, epinephrine hydrochloride, ergotrate, lemon oil, and operating lamps and bulbs. Benzyl benzoate was in short supply during the first three months of 1945.

In all of these items, however, hospital reserve stocks were sufficient to carry over until ZI shipments arrived.

The only serious shortage was penicillin, which was used during the North Apennines Campaign at an unprecedented rate. The 15-day supply on hand when the assault on the Gothic Line jumped off early in September was exhausted before the end of the month. Barely enough for current needs was being received. Deliveries were made to forward units by the blood bank plane, and hospitals shared what reserves they had on hand. The situation remained extremely tight through November, but a comfortable margin was on hand by the end of the year. Despite consumption of penicillin in the first two weeks of the Po Valley Campaign at a rate more than double the previous maximum, a stock sufficient for six weeks' operation at the same high rate was on hand when the war in Italy ended.

Professional Services

Medicine and Surgery

By early September of 1944, when the North Apennines Campaign got under way, medical and surgical practices in the Mediterranean Theater of Operations were relatively stable, continuing without significant changes for the remainder of the war period. The scope of front-line surgery was somewhat enlarged in the fall of 1944, and greater use was made in each successive campaign of both penicillin and whole blood. In the base hospitals wound management continued to emphasize reparative surgery.[18]

In preventive medicine the organization and techniques for the control of malaria had been worked out and tested over a 2-year period and presented no problem as the 1945 breeding season approached. At the same time, with a body of experience to draw upon, the recognition of the disease was more prompt and the treatment more effective. Venereal disease remained a persistent scourge, the incidence of which varied inversely with the extent of combat operations. Preventive measures such as the periodic examination of prostitutes, the policing of cities to control clandestine contacts, and the establishment of prophylactic stations were only moderately successful. The use of pencillin in treatment of venereal diseases, however, materially reduced the time lost from duty.

The greatly reduced incidence of trench foot in the winter months of 1944–45 as compared with the previous winter was a tribute to the careful studies made and effective preventive measures taken. However, the seasonal outbreak of infectious hepatitis in the late months of 1944 was severe, despite the extended studies and other efforts made by a team of officers under Col. Marion H. Barker at the 15th Medical General Laboratory. The Barker group continued its studies through the second epidemic, presenting a consolidated report in the summer of 1945 that remains a major contribution to the literature on hepatitis.[19]

Perhaps the outstanding contribution of the Medical Department in the Mediterranean theater was in the field of neuropsychiatry. The major developments in this area were at the division and army levels, and have been discussed in connection with combat medicine.[20] In summary, the treatment of psychiatric disorders was carried out at four levels. The patient was normally first seen by the battalion surgeon who decided whether any treatment was indicated and, if so, whether to treat the patient on a duty status or refer him to the division psychiatrist. The latter officer, as a rule, maintained a separate treatment center adjacent to the clearing station, with facilities for 50 to 100 patients. Markedly disturbed patients were sent on immediately to the Army neuropsychiatric center, the others being retained, usually for two days, under moderate sedation with some therapy. Those responding favorably went to the division training and rehabilitation center for a few days and were then returned to duty. Those not so responding were evacuated to the Army neuropsychiatric center. From this unit men were returned to full duty, were sent to the convalescent hospital for reclassification, or were evacuated to the communications zone. The bulk of the evacuees went to the base section neuropsychiatric hospital, but those too distant from that installation were sent to a general hospital equipped for psychiatric work. Treatment in the base hospitals followed lines similar to those used in civilian practice, with the addition of orientation, training, and rehabilitation programs. The treatment culminated in return to duty, reclassification for limited duty, or evacuation to the zone of interior. Psychiatric cases evacuated to the ZI decreased from 48 percent in the last six months of 1943 to 21 percent in the corresponding months of 1944. These results, according to Colonel Hanson, theater consultant in neuropsychiatry, were the maximum that could be expected "under our present knowledge of psychiatry."

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[18] Principal sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944, ans. C, D, E, and F; (2) ETMD's for Sep 44 through May 45; (3) Unit rpts of hosps in the theater. (4) Perrin H. Long, "Medicine during World War II," *Connecticut State Medical Journal,* X (August 1946), 627–36.

[19] Infectious Hepatitis in the Mediterranean Theater of Operations, United States Army.

The number of medical officers in the theater available for patient care declined from 5.2 per 1,000 of troop strength in October 1944 to 4.7 in January 1945, where the ratio leveled off. In order to keep field medical officers from losing their skills through restricted practice and limited access to medical literature, a policy of rotation between field and base units was carried on but the saturation point was reached about the end of 1944, by which date the great bulk of medical officers in base hospitals were on limited duty or were overage for field service.

Noneffective rates per 1,000 per annum of troop strength by causes for the months of September 1944 through April 1945 are shown in Table 37.

Dental Service

On a theaterwide basis, the dental service in the Mediterranean continued to be understaffed until early in 1945, partly as a result of the increased number of dental officers called for by the T/O's of the enlarged general hospitals, and partly as the result of losses sustained when southern France went over to ETO. There was a further loss of personnel late in 1944 when 20 dental officers were selected for release from active duty under a War Department directive. Two of the officers released were in the

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[20] See pp. 253-56, 314-16, 409-11, above.

TABLE 37—NONEFFECTIVE RATES PER THOUSAND OF TROOP STRENGTH PER ANNUM SEPTEMBER 1944–APRIL 1945

Cause	September	October	November	December	January	February	March	April
All causes	1,168	1,331	1,071	1,003	1,003	936	843	902
Respiratory	119	195	167	185	215	216	196	154
Intestinal	71	70	46	35	20	21	19	20
Malaria	74	61	38	26	19	16	21	28
Trench foot	....	1	7	8	11	9	3	1
Venereal (white)	104	115	93	103	93	76	63	60
Venereal (Negro)	305	324	270	324	320	285	285	240
Jaundice	21	25	39	71	51	32	25	20
Mental observation	50	82	47	39	32	31	31	41
All diseases[a]	844	930	810	862	878	790	714	657
Injury only	137	135	131	107	103	88	89	98
Battle casualty	187	266	130	34	22	58	40	147

[a] Includes other diseases not listed.

Source: Statistical health rpts for appropriate months.

rank of major, the remainder in the rank of captain.[21]

A total of 64 replacements arrived in January and February 1945, most of them first lieutenants. The number was large enough to relieve all shortages, and at the same time permitted the replacement of older officers in combat areas by younger men. The ratio of dental officers to troop strength in the theater, which had risen from 1:968 in October to 1:1,016 in December 1944, dropped sharply in January to 1:947. The April ratio of 1:927 was still better, although it remained higher than the 1:850 ratio enjoyed at the end of 1943.

In terms of accomplishment, the dental care available to Fifth Army, the Air Forces, and service troops in the theater steadily improved, with prosthetic and operating trucks taking the best in dentistry to the front-line soldier, while the concentration of dental skills in forward clinics allowed a more even distribution of the work load. Colonel Tingay, the theater dental surgeon, continued to keep up with the needs and problems of both combat and base areas by frequent inspections, including an extended tour of Fifth Army dental installations shortly before the launching of the Po Valley Campaign.

Veterinary Service

While the withdrawal of the French Expeditionary Corps and the U.S. VI Corps from Fifth Army removed thousands of animals from Italy and ultimately from the Mediterranean theater, the extensive use of pack mule trains to supply Fifth Army in the northern Apennines provided ample scope for theater veterinarians. The Fifth Army animal service was backed up in the Peninsular Base Section by fixed veterinary hospitals, with both army and communications zone activities being directed and co-ordinated by the theater veterinarian, Colonel Noonan.[22]

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[21] Principal sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944, an. G; (2) Annual Rpt, Surg, PBS, 1944; (3) Dental Hist, North African and Mediterranean Theaters of Operations.

At the date of the launching of the North Apennines Campaign, there were only two fixed veterinary hospitals in the Peninsular Base Section, both Italian units. The 213th Veterinary General Hospital (Italian) was occupying the buildings of a former Italian Army veterinary hospital at Grosseto; and the 1st Veterinary Station Hospital (Italian) was at Persano in the Salerno area. Both were operated in connection with stations of the 6742d Quartermaster Remount Depot, which maintained its own veterinary dispensaries at both posts, and another in the vicinity of the Naples medical center. Shortly after the initial assault on the Gothic Line, the remount depot opened a new station at Pisa, again with a veterinary dispensary to care for animals at the depot. The station hospital at Persano was redesignated the 212th Veterinary Station Hospital (Italian) and assigned to Fifth Army. With the departure of half of the 6742d Quartermaster Remount Depot for southern France in mid-October, the remount stations at Persano and Naples were closed. Late in January the 2610th Quartermaster Remount Depot was activated and took over the facilities at Pisa. Three veterinary officers were assigned to this depot and two to the 6742d Quartermaster Remount Depot at Grosseto.

Throughout the North Apennines Campaign animals from Fifth Army veterinary installations were evacuated by rail and truck to the 213th Veterinary General. The physical plant was adequate to the demands made upon it, but equipment was insufficient and the quality of personnel was poor. "Italian units," wrote Colonel Noonan, "are incapable of rendering satisfactory veterinary service, as their officers are for the most part indolent, in addition to being poorly equipped professionally."[23] The T/O of the 213th called for 15 officers and 253 enlisted men, but actual strength never reached those totals. At the end of 1944 there were only 7 officers and 177 enlisted men, being supervised by a U.S. veterinary officer and 4 enlisted men from the 2698th Technical Supervision Regiment. A second American veterinary officer was on detached service from the 24th Replacement Depot.

It was obvious by December of 1944, when the 10th Mountain Division with its large animal complement was assigned to Fifth Army, that the veterinary support offered by PBS would have to be materially improved before another mountain campaign was undertaken. Colonel Noonan asked at that time for a U.S. veterinary general hospital[24] but the postponement of the Fifth Army offensive until spring relieved the immediate pressure. A realignment of the PBS veterinary service along the lines desired by Colonel Noonan was deferred until March 1945.

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[22] Principal sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944, an. H; (2) Annual Rpt, Surg, PBS, 1944; (3) Vet Hist, MTO, (4) Med Sitreps, PBS, Sep 44–May 45; (5) Quarterly Hist, Vet, PBS, 1 Apr–30 Jun 45; (6) Med Sitreps, 213th Vet Gen Hosp; and Vet, 6742d QM Remount Depot, Sep and Oct 44; (7) Vet Rpts, Sick and Wounded Animals, 6742d QM Remount Depot, 1944; (8) Inspection of Veterinary Service, NATOUSA and MTOUSA, 1944, 1945. (9) Misc docs relating to MTO vet service, 1945. (10) Monthly Hist Rpt, 2604th Vet Sta Hosp, Mar–May 45; (11) Hist, 2605th Vet Gen Hosp, 15 Mar–30 Apr 45.

[23] Memo, Col Noonan, Col, Theater Vet, to Plans and Opns, 8 Dec 44.

[24] Memo, Noonan to Surg, MTOUSA, 24 Nov 44.

On 15 March the 2604th Veterinary Station Hospital (Overhead), the 2605th Veterinary General Hospital (Overhead), and the 643d and 644th Veterinary Detachments were all activated at Leghorn, where personnel joined and were staged over the next few weeks. The commanding officer of the general hospital was Lt. Col. Walter Smit, while the station hospital was commanded by Capt. John L. West. Both units were organized with skeleton staffs in the expectation that Italian veterinary personnel would be attached. In a parallel move, the 213th Veterinary General Hospital at Grosseto was given more U.S. supervisory personnel and redesignated the 1st Veterinary General Hospital (U.S.-Italian).

The 2605th Veterinary General was ready by the time the main Fifth Army drive was launched. The hospital moved into position at Pontepetri west of Highway 64 on 19 April. The site, which had been occupied until 1 April by the 211th Veterinary Evacuation Hospital, was in the rear of the 10th Mountain Division sector. First patients were received on 21 April from the 211th, which had moved forward to Riola. Other casualties came direct from the 10th Mountain Division. All were transported by the 643d Veterinary Evacuation Detachment. On 24 April the 2d Veterinary General Hospital (U.S.-Italian) was organized and attached to the 2605th at Pontepetri, but was of less help than had been hoped. The Italian unit had only two veterinary officers, and all of its enlisted men were young inductees with only two months in the Army and no experience with animals.

The 2604th Veterinary Station Hospital, with the 644th Veterinary Evacuation Detachment attached, did not go into operation until the war was over. On 3 May the unit moved to San Martino, the site of a former Italian Army artillery school a few miles south of the Po River on the Bologna-Verona axis. The Fifth Army Remount Depot was in the area, with 5,000 captured or abandoned German animals, about 200 of which were in need of veterinary care. These were turned over to the hospital when it opened on 5 May. A few days later elements of the British remount organization moved into San Martino, and the area was turned over to them on 15 May. During its brief 10-day operating span, the 2604th Veterinary Station Hospital treated more than 400 animals.

Meanwhile, the 2605th Veterinary General Hospital had moved from Pontepetri to a site about 8 miles beyond Mirandola, where it too opened on 5 May. Casualties were received from the 211th Veterinary Evacuation, which was at Ghisione only about 10 miles forward, and from the 2604th Veterinary Station, which was no more than 12 miles away.

The food inspection work that made up the remainder of the Veterinary Corps mission in the theater was routine by the fall of 1944. By the start of the Po Valley Campaign there were thirteen veterinary food inspection detachments operating in MTOUSA, at ports and base section installations, supplemented by two port veterinarians and a quartermaster refrigerator company veterinarian. The Air Forces had three aviation veterinary detachments and two veter-

Captured Horse at the 2604th Veterinary Station Hospital at San Martino

inary sections engaged in the same work. These units were adequate to provide complete food inspection coverage for the theater.

Nursing Service

Through the first ten months of 1944, there had been an average of 4,000 nurses in the Mediterranean theater. In November 1,358 were transferred to ETO, and the year ended with only 2,446 nurses remaining in MTOUSA, or a ratio of 4.8 per 1,000 of troop strength compared with a 5.5 ratio in October. No replacements were received, even for normal attrition, leaving the theater approximately 350 nurses below authorized strength. Hours were often long and working conditions, especially in the field and evacuation hospitals on the Fifth Army front, were difficult. "The nurses," wrote a qualified observer in December, "are showing definite signs of fatigue. Many of them are getting irritable with conditions and people to which they could formerly accommodate themselves. Little things bother them which previously they could laugh off. Young faces have old masks."[25]

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[25] Memo, Maj Margaret D. Craighill, Consultant for Women's Health and Welfare Activities, to TSG, 20 Dec 44. Other sources for this section are: (1) Annual Rpt, Med Sec, MTOUSA, 1944, an. I; (2) Annual Rpt, Surg, PBS, 1944; (3) Annual Rpts, Surg, NORBS, 1944, 1945; (4) Med Hist, AAFSC MTO, 1944, 1945; (5) Med Hist, 2d Aux

Some tensions were relieved by rotation between base and army hospitals and by sending nurses to rest areas whenever they could be spared. In terms of strength, however, no improvement was possible, the ratio to troop strength declining to 4.7 per 1,000 by April. The redeeming feature was a steady improvement in the ratio of nurses to patients. Owing primarily to light battle casualties and an excellent general health level among theater troops, the ratio of nurses to patients rose from 1:21 in December 1944 to 1:19 in January and February 1945; 1:17 in March; and 1:15 in April.

A morale factor was the relaxing of promotion policies in the fall of 1944, when authority was granted to promote all nurses who had been in the grade of second lieutenant for 18 months, regardless of T/O allotments. Promotions were also authorized for first lieutenants who had been 18 months in grade if they were otherwise qualified for advancement. Under this authorization, 227 second lieutenants and 19 first lieutenants were advanced in rank in the closing months of 1944. When the war ended in Europe there were 2,267 nurses in the Mediterranean theater, of whom one was a lieutenant colonel, 15 were majors, 100 were captains, and 1,328 were first lieutenants. Only 823, or about 36 percent of the total, were in the lowest rank.

Army Civil Public Health Activities

The Allied drive into the northern Apennines coincided with far-reaching changes in the political and administrative structure in Italy. With the government of Ivanoe Bonomi seemingly secure, and more than half the country freed from German domination, it appeared an unnecessary burden to require Field Marshal Alexander to double as military governor. Early in September 1944, therefore, Allied Force Headquarters resumed direct jurisdiction over the Allied Control Commission, leaving the army group commander responsible only for liberated territory still within the combat zone. Shortly thereafter President Roosevelt and Prime Minister Churchill, as one of the results of a conference in Quebec, issued a joint declaration promising to the Italian Government greater control over its own affairs, both political and economic. Proposals for implementing the new policy were worked out by Harold Macmillan, then British resident minister at AFHQ, and with only minor changes were approved in both London and Washington in time to go into effect in February 1945. Army responsibility in matters of civil public health in the communications zone was thereafter primarily advisory except for medical supply, and even here, after 20 October 1944, distribution had been in the hands of an agency set up for that purpose by the Italian Government.[26]

In the combat zone, the Allied Military Government organization continued to exercise control through the commanders of the two Allied armies. In

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Surg Gp: Rpt of Nursing Activities while Functioning with Fifth Army; (6) Parsons and others, Hist of Army Nurse Corps in MTOUSA.

[26] Principal sources for this section are: (1) Komer, Civil Affairs and Military Government in the Mediterranean Theater; (2) Lewis, Rpt to WD, History of Civil Affairs in Italy, 7 Dec 1945; (3) Turner, chs. XI, XII, in Bayne-Jones, "Preventive Medicine," vol. VIII, Civil Affairs-Military Government.

the Fifth Army sector, General Hume continued to administer civil affairs under both Clark and Truscott. For the most part AMG concentrated on the restoration of water supplies, sewage disposal, power facilities, sanitation, and the like. Florence and Pisa were badly damaged, presenting on a smaller scale a repetition of the problem of Naples a year earlier. The work of restoration was still going on when the heavy rains of September and October added to the damage, but both cities were functioning normally by winter. There were no serious outbreaks of disease anywhere in the Arno Valley.

In the final drive that ended the war in Italy, Fifth Army military government and civil public health officers had relatively few problems. The German collapse was so swift and so complete that the great cities of northern Italy suffered little damage. Partisan forces, co-operating with the Allies, were able to save most public utilities from destruction. The civil public health problems of the occupation period were those of food, clothing, hospitalization, and medical supply rather than the restoration of water and power facilities and sewers and were soon transferred from Fifth Army AMG to the Allied Control Commission and the Italian Government.

CHAPTER XIV

Contraction and Redeployment

Once the war in Europe was at an end, American commanders in the Mediterranean theater turned their attention to the war still being vigorously prosecuted in the Pacific and to the demobilization of troops not required for the conquest of Japan. The prompt redeployment of combat and service units to the Pacific and the contraction of operations in Italy as rapidly as circumstances permitted were the objectives toward which all Medical Department activities were oriented during the summer of 1945. An understanding of redeployment policies and plans is therefore essential to any evaluation of the medical service during this period.

Redeployment Policies and Plans

A War Department redeployment plan prepared in August 1944, when there was reasonable prospect of an early end to hostilities in Europe, called for the transfer of 45,000 service troops and 37,000 Air Forces troops from Europe and the Mediterranean each month from October 1944 through January 1945, with ground force troops being returned to the United States for further disposition. The criteria that would determine whether individual soldiers would be sent to the Pacific, used as occupation forces, or returned home for demobilization were essentiality, length and arduousness of service, and number of dependents. For the Medical Department, essentiality was the primary factor.[1]

The first theater plan for redeployment was published in late September of 1944. Following the general pattern laid down by the War Department, medical units were divided into two categories: those required to care for troops in the theater during the demobilization period, and those available for other uses. Units placed in the second category were further subdivided into those to be transferred to another theater, those to be used to support garrison troops in MTO or in the United States, and those to be returned to the United States for inactivation. Bed requirements for garrison troops were postulated at 4 percent of strength.

Before this program got out of the planning stage, it was clear that there would be no final military victory in Europe during 1944, and the whole question of redeployment was temporarily shelved. It came up again in March 1945 with the receipt of a War Department forecast considered by the MTOUSA medical section to be unrealistic. For one thing, requirements for the occupation of Austria, then regarded as a Fifth Army responsibility, were not known. Another objection was that the forecast called for early redeployment of types of units not actually present in the theater. The 2,000-bed general hospitals, which were also scheduled for early transfer, were regarded by General Stayer as unsuitable for the Pacific and necessary during redeployment in Italy. There was also disagreement as to the speed with which the medical depot companies ought to be withdrawn, in view of the volume of equipment to be prepared for shipment. Most of the objectionable features were eliminated from a new War Department forecast received early in May, and redeployment regulations consistent with it were issued on the 12th of that month.

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[1] This section is based primarily on the following documents: (1) Final Rpt, Plans and Opns Off, Office of the Surg, MTOUSA. (2) Annual Rpt, Surg, Fifth Army, 1945.

Under these regulations the theater commander was to assign each unit to one of the following categories: (I) units to occupy areas of Europe; (II) units to be used in the war against Japan; (III) units to be inactivated within the theater; and (IV) units to be returned to the United States for inactivation. Category II was broken down into (A) units to be shipped to the Pacific direct; (B) units to be shipped to the Pacific by way of the United States; and (C) units to be shipped to the United States to be placed in strategic reserve. Since the occupation of Austria had by this date been assigned to forces already in that area and the occupation of cobelligerent Italy was not contemplated, no MTOUSA medical units fell into Category I.

At the same time, each officer and enlisted man in the theater was given an Adjusted Service Rating Score (ASRS) as of 12 May 1945, based on a point for each month of service since 16 September 1940, a point for each month overseas, 12 points for each child under 18 years of age up to a limit of three, and 5 points for each combat decoration and battle participation award.[2] For enlisted men the critical score was tentatively set as 85 points. Critical scores for Medical Department officers, received late in May, varied with the corps. For hygienists and dietitians, the figure was 62; for dentists, 63; for physical therapists, 65; for nurses, 71; for Medical Administrative Corps officers, 88; and for Medical Corps officers 85 plus, according to specialty. As a preliminary to redeployment, high score men were to be transferred to Category III and IV units, while units placed in Category II were to be staffed with officers and men whose ASRS's were below the critical level. High-score men in Category III units were to be returned to the United States as casuals after disbandment of their organizations. High-score personnel deemed nonessential were to be withdrawn on a continuing basis from all units and returned to the United States as casuals. Where enough low-score officers were not available to staff outgoing units, essentiality became the overriding consideration.

Although many difficulties arose owing to the disproportionately large number of high-score men in medical units, the program laid down in May was carried out faithfully until the end of July. By that date, however, the demands for shipping to move men and equipment to the Pacific were so great as to preclude the movement of medical units to the United States for disbandment. Early in August, therefore, it was decided to inactivate Category IV units in the theater. All transfers to the Pacific were abruptly halted with announcement of the Japanese surrender on 14 August, and personnel thereafter were shipped to the United States as rapidly as possible on the basis of point scores alone.

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[2] For more detailed discussion, see McMinn and Levin, *Personnel in World War II*, pp. 487 ff.

Medical Support of Fifth Army

Medical support of Fifth Army in the postwar period was of two types. As long as combat formations remained active in the field, even though they did no more than patrol national frontiers, they were accompanied by their organic medical units and were served by mobile hospitals. On the other hand, when divisions were sent back to redeployment and training centers for new combat assignments or demobilization, the medical service more closely resembled that of a fixed post, with dispensaries and station hospitals replacing clearing platoons and evacuation or field hospitals.

Medical Service in the Field

Immediately following the German surrender in Italy, combat elements of Fifth Army moved out to the frontiers, primarily for the purpose of rounding up prisoners and preserving order. On the left flank, the 34th Division advanced to the French border. The 1st Armored, to the right of the 34th, patrolled the Swiss frontier in the vicinity of Lake Como. The 10th Mountain Division advanced north from the head of Lake Garda, while the 88th swept up through Bolzano to the Brenner Pass and the 85th reached the Austrian border farther to the east, in the Dobbiaco area. The 91st, which had passed to operational control of Eighth Army on 5 May, moved to the Yugoslav border at Gorizia and backed up the British occupation of Trieste. The 92d Division remained in Genoa and the Brazilian Expeditionary Force kept its positions around Alessandria.[3]

Each of these divisions was supported by its own organic medical battalion and by one or more mobile hospital units. The 2d Platoon of the 15th Field Hospital continued to operate at its Genoa site until the end of June, when the 92d Division was withdrawn for redeployment. The 1st Platoon of the 32d Field Hospital moved from the outskirts of Milan to Alessandria on 3 May, and two days later the 3d Platoon opened in Milan itself. The 2d Platoon moved up from Parma to Turin in support of the 34th Division on 8 May.

The 15th Evacuation hospital, after turning its patients over to the 37th General in Mantova, opened on 12 May near Milan as a station hospital serving both the 34th Division and the 1st Armored. The 3d Platoon of the 32d Field, no longer needed in Milan, moved to Desenzano on 23 May, where it was replaced early in June by a 100-bed detachment from the 8th Evacuation Hospital. At the same time, the 1st Platoon was relieved at Alessandria by a similar detachment from the 38th Evacuation,

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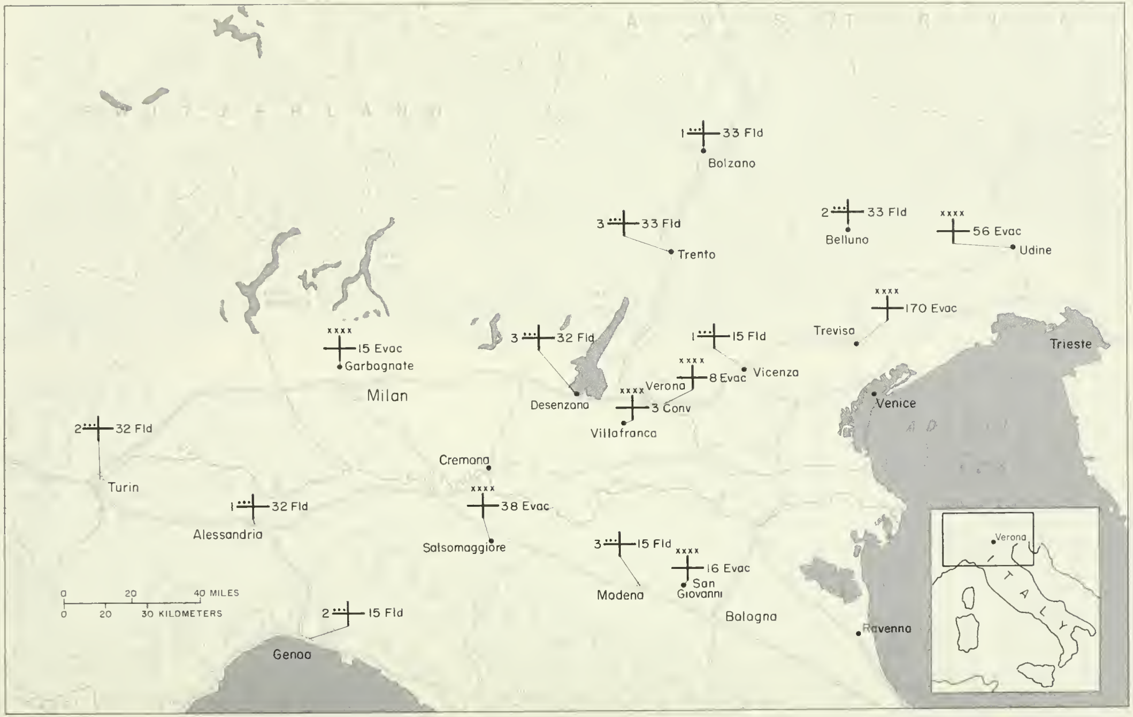
[3] This section is based primarily on the following: (1) Annual Rpt, Surg, Fifth Army, 1945; (2) Opns Rpts, II Corps, May, Jun 45; (3) Opns Rpts, IV Corps, May–Jul 45; (4) *Fifth Army History*, vol. IX; (5) Schultz, *85th Infantry Division*, pp. 230–34; (6) Delaney, *Blue Devils*, pp. 225–34; (7) Robbins, *91st Infantry Division*, pp. 335–65; (8) Goodman, *Fragment of Victory*, pp. 179–82; (9) Unit rpts of organic med bns, and of hosps mentioned in the text.


SWITZERLAND
AUSTRIA
1 33 Fld
Bolzano
3 33 Fld
Trento
2 33 Fld
Belluno
xxxx 56 Evac
Udine
xxxx 170 Evac
Treviso
Trieste
xxxx 15 Evac
Garbagnate
Milan
3 32 Fld
Desenzano
1 15 Fld
Vicenza
xxxx 8 Evac
Verona
xxxx 3 Conv
Villafranca
Venice
2 32 Fld
Turin
Cremona
xxxx 38 Evac
Salsomaggiore
1 32 Fld
Alessandria
3 15 Fld
Modena
xxxx 16 Evac
San Giovanni
Bologna
Ravenna
2 15 Fld
Genoa
0 20 40 MILES
0 20 30 KILOMETERS
Verona
ITALY

Map 43—Medical Installations Supporting Fifth Army, 1 June 1945 located since 26 May at Salsomaggiore south of Cremona; and the 2d Platoon at Turin turned its patients over to a detachment from the 15th Evacuation. The 32d Field was thus freed for redeployment. (*Map 43*)

In the center of the fan-shaped army area, most of the Fifth Army hospitals were tied down with prisoner of war patients and with the supervision of German POW hospitals. The 3d Platoon of the 15th Field at Modena, the 1st Platoon of the 15th, which moved to Vicenza early in May, and the 8th Evacuation south of Verona were all so engaged. Even the 3d Convalescent Hospital, which moved up from Montecatini to Villafranca on 4 May, was before long largely occupied supervising a German POW convalescent hospital. When the 2d Platoon of the 602d Clearing Company closed on 16 May, the 3d Convalescent also took over operation of the Fifth Army Venereal Disease Center.

The 170th Evacuation hospital, which had been en route to Treviso when the war ended, remained at that site in support of the 85th and 88th Divisions until 2 June, when it closed for redeployment. Its sister unit, the 171st Evacuation, closed at Vicenza on 7 May, opening the next day at Cormons in support of the 91st Division. The site was only a stone's throw from the Yugoslav border, about midway between Udine and Gorizia. On 27 May the 171st also closed for redeployment, having been replaced in the interval by the 56th Evacuation, which moved from Bologna to Udine on 19 May. The larger unit was required because of a flare-up along the border that brought the 10th Mountain Division to the support of the 91st.

The 33d Field Hospital gave second- and third-echelon support to the 85th and 88th Divisions. The 1st Platoon, which had been immobilized south of Bologna throughout the greater part of the Po Valley Campaign, opened in Bolzano on 7 May. The 2d Platoon, at Bassano when the war ended, moved north to Primolino on 3 May and on to Belluno on the 7th. The unit backtracked to Treviso on 4 June, however, to take the overflow from the 56th Evacuation at Udine. The 3d Platoon moved from Vicenza to Trento on 9 May.

Fifth Army itself began closing out in June. On the 7th of that month the 88th Division was reassigned to MTOUSA as the theater prisoner of war command, though the division continued to be administered by Fifth Army. About the middle of June the Brazilian Expeditionary Force moved to Francolise north of Caserta for redeployment training, and the 92d Division moved to its own redeployment training area near Viareggio. On 25 June the 1st Armored Division left the theater for occupation duties in Germany, and on the 29th II Corps also passed to ETO to administer the occupation of Austria. The bulk of the Fifth Army service troops were moved out during June, since a limitless reservoir of German prisoner personnel was available to perform their functions.

Early in July the 85th Division moved to a redeployment area along the Volturno, and the 10th Mountain Division moved to Florence preparatory to a Pacific assignment. On 11 July General Martin left the theater for an assignment in the Pacific, and his executive officer, Col. Charles O. Bruce, became Fifth Army surgeon. About this time a long-standing territorial squabble between France and Italy was curbed, making occupation of Aosta Province on the French border no longer necessary. Later in the month, therefore, the 34th Division, which had been patrolling the disputed area, was free to relieve the 91st at Udine, releasing the latter formation for redeployment training. With the reassignment of the 34th Division, and the transfer of the Legnano and Cremona Groups of Italian partisans and the 6th South African Armoured Division to British control, IV Corps became nonoperational as of 15 July.

As the army contracted, medical units readjusted their positions, so that they too could be redeployed as rapidly as possible.

The 16th Evacuation Hospital, which had remained at its San Giovanni site since the end of hostilities, relieved the 56th at Udine on 4 August. On 15 August the 1st Platoon of the 15th Field Hospital, which had been supervising German prisoner of war installations at Vicenza, relieved the 15th Evacuation in Milan; and a few days later the 2d Platoon relieved the 32d Field at Bolzano. On 1 September all remaining Fifth Army units were assigned to the Peninsular Base Section. Fifth Army became nonoperational on 9 September 1945, the second anniversary of the Salerno landings, and was inactivated on 2 October. On 25 September the 15th Field Hospital was reassigned from PBS to the 88th Division, and a week later, operating as a single hospital for the first time since the beginning of the Po Valley Campaign, relieved the 16th Evacuation at Udine, where the 88th relieved the 34th Division.

During the closing months of Fifth Army's existence, the medical service was largely of garrison type. The incidence of disease was low, with malaria well under control and intestinal diseases almost nonexistent. Even the venereal disease rate, contrary to all expectations, was surprisingly low. The rate per 1,000 per annum rose from 34 for the week ending 4 May to 55, 91, and 111 for the three succeeding weeks, but was down to 81 by June. It remained between 93 and 67 until August, when it dropped to 58. The only disease outbreak of any significance occurred in the last week of June, when 27 cases of poliomyelitis suddenly appeared in the 10th Mountain Division, then in the Udine area. Despite intensive investigation, no cause was determined.

COLONEL BRUCE

Medical Service for Staging Units

As soon as MTOUSA redeployment plans were firm, Fifth Army began establishing redeployment and training centers where troops could be prepared for transfer to another theater or for shipment home. Centers were established for nondivisional units at Montecatini and Florence, the former for Category II units, the latter for Category IV. In June one area near Viareggio was prepared for the 92d Division, and another at Francolise, just north of the Volturno in the vicinity of Capua, for the Brazilian Expeditionary Force. About the 1st of July another redeployment and training center was set up along the Volturno near Caiazzo, where a replacement center had previously been located. Later in the same month the last of the redeployment centers was established, at Cecchignola just south of Rome, which had also been the site of a replacement center. Both the Volturno and Cecchignola centers served divisional troops.[4]

Fifth Army supplied medical service for each of the centers processing nondivisional units–Montecatini, Florence, and for a time Volturno and later Cecchignola. In each case a team of three officers was attached to the center, one a field-grade medical officer who served as area surgeon; one a medical records inspector; and the third a medical supply inspector. The surgeon was responsible for sanitation and medical care, as well as for checking the physical condition of each man to determine his fitness for further overseas duty. The team as a whole was responsible for checking the administrative condition of medical units and detachments. The divisional units received medical care through their organic medical battalions, with the clearing company providing dispensary service.

Fifth Army also operated dental clinics at Montecatini, Florence, and Cecchignola, where every effort was made to send the men out in first-class dental condition whether they were homeward bound or destined for the Pacific. The largest of the clinics—that at Montecatini—was staffed by thirty dental officers, assisted by both U.S. and German dental technicians.

Hospitalization at Montecatini was supplied by the 182d Station Hospital and by the 94th Evacuation, which moved to the center from Carpi on 16 May. All facilities of the 94th except a dispensary were closed out late in June, and the 182d was relieved at that time by a detachment of the 70th General Hospital under PBS control. The other centers were supplied with hospitalization exclusively by PBS units from the start. The Florence center was initially supported by the 55th Station Hospital at Pratolino; then by the 225th Station, a detachment of the 70th General, and a detachment of the 64th General, which succeeded one another in that order. The 105th Station at Pisa and its successor, the 55th, were available to the Viareggio bivouac of the 92d Division, which also made use of hospitals in Leghorn. Two platoons of the 35th Field Hospital that opened at Sparanise on 8 July had Brazilian medical personnel attached to serve the nearby Brazilian redeployment center. The Volturno area was served by the 154th Station at Caiazzo; and the Cecchignola center received hospital support from the 40th Station and its replacement, a detachment of the 37th General Hospital. The 34th Station was also available if needed.

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[4] Principal sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1945; (2) Final Rpt, Plans and Opns Off, Off of Surg, MTOUSA; (3) Unit rpts of div surgs and organic med bns; (4) Unit rpts of hosps mentioned in the text.

Other features of the Fifth Army medical service for staging troops were the operation of dispensaries and prophylactic stations in rest areas, and the sanitary inspection of hotels and restaurants in the large cities of northern Italy to which leaves were granted.

Hospitalization and Evacuation

At the theater level, hospitalization and evacuation of the sick and injured continued to be the primary mission of the medical service as long as American soldiers remained in the Mediterranean. Both functions, however, were sharply curtailed in keeping with the improved health status resulting from the cessation of hostilities and the subsequent reduction of troop strength.

Contraction of Hospital Facilities

The problem facing the MTOUSA and PBS surgeons when the redeployment period began was one of keeping a safe number of fixed beds in the areas of troop concentration and a balanced distribution of facilities and specialized personnel, at the same time closing out hospitals to meet the redeployment schedule and readjusting personnel in order to staff with low-score men units tabbed for further combat. It was not an easy task, but it was accomplished smoothly and with few delays.

Since the bulk of the U.S. forces were in northern Italy, hospital facilities in the Naples area were the first to be surplus to theater needs. One 500-bed station hospital—the 52d—was closed the day after the war in Italy ended, and earlier plans to re-establish the unit at another location were abandoned. The 118th Station closed on 20 May and the 106th four days later, leaving only the 21st Station and the 17th, 45th, and 300th Generals in Naples, with an aggregate Table of Organization bed strength of 5,500.[5]

In Rome a readjustment was made when the 500-bed 73d Station Hospital was reassigned to PBS from Rome Area on 25 May, preparatory to closing, and the 250-bed 34th Station was transferred to the Rome Area jurisdiction. It was possible to release only one of the Leghorn hospitals in May—the 114th Station, which closed on the 29th. The 114th, which had been the PBS psychiatric hospital since its arrival in Italy almost a year earlier, had been receiving patients in diminishing numbers for several weeks.

Also closed in May were the 225th Station Hospital at Fano and the 35th Field Hospital, whose platoons had been operating separately at Lecce and Erchie in the heel of Italy and at Rimini on the western coast of the Adriatic. Both of these hospitals, however, were scheduled for new assignments under PBS after termination of their attachments to the Adriatic Base Command.

The 225th Station was in fact the key to a difficult situation in the Florence area, where the 24th General Hospital was required to vacate its quarters not later than 1 June to make way for the redeployment and training center. A minimum of 500 beds would be required to support the center, but no suitable site was available in Florence. Permission to use the theological seminary building occupied during the North Apennines Campaign by the 15th and 94th Evacuation Hospitals was refused by the archbishop of Florence. The only practical solution was to replace the 250-bed 55th Station at Pratolino with a larger unit. Additional space was provided by converting a nearby villa into officers quarters and turning an enclosed porch into a ward. On 9 May, ten days after it closed at Fano, the 225th began taking over from the 55th by infiltration. By 1 June, when the 24th General moved out of the area, the 225th was in full operation with facilities for 750 beds.

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[5] Principal sources for this section are: (1) Final Rpt, Plans and Opns Off, Office of Surg, MTOUSA; (2) Med Sitreps, PBS, May–Oct 45; (3) Unit rpts of hosps mentioned in the text; (4) ETMD's of the hosps mentioned in the text for May–Oct 45.

The process of readjustment and contraction was accelerated in June. In southern Italy the 45th General Hospital—last installation in the Naples medical center—closed on 9 June, and on the 21st replaced the 26th General at Bari as an ABC unit. On 10 June the 262d Station Hospital at Aversa was relieved by a platoon of the 35th Field. The 34th Field closed its 1st Platoon at Spinazzola on 5 June and its 2d and 3d Platoons at Cerignola ten days later, the latter being replaced by the 2d Platoon of the 4th Field. In Rome, the 73d Station closed on 18 June.

In northern Italy, the 81st Station at Leghorn and the 74th at Bologna both closed on 20 June. On 25 June the 500-bed 105th Station, having evacuated all but sixty of its Russian patients to their homeland, was replaced by the 250-bed 55th Station. The 55th was able to send the remaining Russians home by 28 June. Also on 25 June, the 182d Station closed at Montecatini and the 225th ceased operations at Pratolino. Both units were replaced by 500-bed detachments of the 70th General Hospital, which ceased taking patients at Pistoia at that time.

July saw the closing out of another 6,000 fixed beds in Italy and further readjustment to provide adequate coverage. The 1st and 2d Platoons of the 35th Field Hospital opened at Sparanise in support of the Brazilian redeployment center on 8 July, and on the 12th the 70th General moved its headquarters from Pistoia to Pratolino. The major shutdowns began with closing of the 2,000-bed 12th General at Leghorn on 7 July. On the 18th the 60th Station at Senigallia was relieved by the 4th Field. The 103d Station closed at Pisa on 20 July, its place being taken by the 99th Field, whose scattered platoons were brought up from Grosseto, Castagneto, and Empoli.

The 40th Station closed at Cecchignola redeployment center south of Rome on 21 July, replaced by a detachment of the 37th General from Mantova. On the same day the 32d Station closed at Caserta, where it was relieved by a detachment of the 300th General. The 21st Station closed in Naples on 23 July, and the 6th General closed at Bologna the following day. The 750-bed 7th Station Hospital closed in Leghorn on 26 August, and by the end of the month the 154th Station at Caiazzo and the Cecchignola detachment of the 37th General were also closed.

As of 1 September, nearly four months after the end of the war in Italy, there remained 14,350 fixed beds in MTOUSA, including the 16th Evacuation

Hospital and the 15th Field Hospital, which were assigned to PBS from Fifth Army at that time.[6] Of this total, 2,400 were attached to the Adriatic Base Command and 250 were assigned to Rome Area, the remainder being PBS units. In terms of distribution, 3,900 beds were in the Naples-Caserta area; 3,000 in Leghorn; 2,000 in the Bari-Foggia area serving Air Forces units. There were 2,150 beds in the Arno Valley between Florence and Pisa; 1,500 in Mantova; 750 at Udine; 400 at Senigallia; 250 in Rome; and 100 each at Milan, Desenzano, and Bolzano.

The authorized ratio of fixed beds to troop strength for the theater was lowered from 6.6 to 4 percent on 15 September, and a further exodus of hospitals followed. The 33d, 37th, 45th, and 70th General Hospitals, the 16th Evacuation, and the 4th Field were closed on or before 1 October. The closing of the 17th General and 35th Field Hospitals in October and the 64th General in December left the Mediterranean theater with a total of 3,800 beds at the end of the year.

During the redeployment period hospitalization in base installations followed a predictable pattern. The three fixed hospitals in the Po Valley were largely occupied through May and June with prisoners of war, many of them with neglected battle wounds. General hospitals foremost in the line of evacuation from the combat zone, notably the 24th at Florence and the 70th at Pistoia, carried a heavy surgical load during May, but the backlog of battle wounds was largely caught up by the end of the month. In the Naples and Leghorn areas, general hospitals reported rises in venereal cases and in common respiratory and intestinal diseases, owing primarily to the closing out of the station hospitals that normally handled such cases. Hospitals serving the redeployment centers noted a considerable rise in neuropsychiatric cases as a result of the rigorous screening of personnel for Category II units. There were otherwise no significant disease trends, and admissions remained well below capacity despite the continuous reductions in bed strength.

Evacuation

With both mobile and fixed hospitals scheduled for early redeployment, it was necessary to accelerate the evacuation process by every possible means. The backlog of U.S. battle casualties was largely cleared from the army area by the middle of May, while ZI evacuation alone during that month released more beds than were required for new admissions. A continuing process of moving ZI patients to Naples and of concentrating communications zone cases in smaller and smaller numbers of hospitals made intratheater evacuation also a continuous process.

Intratheater Evacuation—In the period between the ending of hostilities in Italy and the dissolution of Fifth Army it is impossible to separate evacuation from army hospitals and patient transfers from one base hospital to another. The bulk of the battle casualties were cleared from the Po Valley by the middle

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[6] The difference between 14,350 fixed beds on 1 September 1945 and 13,950 as given in Appendix A–6 for 31 August is represented by the 400 beds of the 15th Field Hospital, assigned to PBS on 1 September.

TABLE 38—INTRATHEATER EVACUATION: U.S. AND ALLIED PERSONNEL
MAY–SEPTEMBER 1945

Month	To Florence	To Leghorn		To Naples		Subtotal			Total
	Air	Air	Rail	Air	Sea	Air	Rail	Sea	
Total	298	2,308	1,049	1,363	3,192	3,969	1,049	3,192	8,210
U.S.	280	2,166	1,044	1,312	2,939	3,758	1,044	2,939	7,741
Brazilian	6	55	1	28	244	89	1	244	334
Other	12	87	4	23	9	122	4	9	135
May	298	1,073	503	835	1,810	2,206	503	1,810	4,519
U.S.	280	933	503	828	1,597	2,041	503	1,597	4,141
Brazilian	6	55	....	....	207	61	....	207	268
Other	12	85	....	7	6	104	....	6	110
June	....	395	265	65	548	460	265	548	1,273
U.S.	....	395	260	50	536	445	260	536	1,241
Brazilian	....	....	1	10	9	10	1	9	20
Other	....	....	44	5	3	5	4	3	12
July	....	355	281	160	834	515	281	834	1,630
U.S.	....	353	281	160	806	513	281	806	1,600
Brazilian	....	....	....	....	28	....	....	28	28
Other	....	2	....	....	....	2	....	....	2
August	....	261	....	58	....	319	....	....	319
U.S.	....	261	....	58	....	319	....	....	319
Brazilian	....	....	....	....	....	....	....	....	....
Other	....	....	....	....	....	....	....	....	....
September	....	224	....	245	....	469	....	....	469
U.S.	....	224	....	216	....	440	....	....	440
Brazilian	....	....	....	18	....	18	....	....	18
Other	....	....	....	11	....	11	....	....	11

Source: Compiled from Medical Sitreps, PBS, May-September 1945.

of May, using planes exclusively to carry the men back to base hospitals in the Florence and Leghorn areas. More than 1,300 U.S. and Allied patients were flown out of the Po Valley between 2 and 15 May. (*Table 38*) Flights from Bologna, however, carried patients from the two PBS hospitals in that city as well as from the army field and evacuation hospitals.[7]

Air evacuation began both from Bologna and from Villafranca airfield south of Verona about 2 May, and shortly thereafter from Treviso and Milan. In June planes of the 802d Medical Air Evacuation Transport Squadron began lifts from the Udine area, but by this date the number of patients to be evacuated was small. The squadron became inoperative in June, and its sister squadron, the 807th, in August.

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[7] Principal sources for this section are: (1) Final Rpt, Plans and Opns Off, Office of the Surg, MTOUSA; (2) Med Sitreps, PBS, May–Sep 45; (3) Med Hist, 802d MAETS.

The only unusual incident in evacuating from Fifth Army units occurred late in May in the San Remo area along the Italian Riviera, where the 34th Division was engaged in patrol activities. Authorization was requested and received from SHAEF to evacuate patients from this area to the 78th Station Hospital at Nice, France, an ETOUSA unit that was only thirty-five miles away, whereas the nearest MTOUSA hospital was the 2d Platoon of the 32d Field in Turin, more than 150 miles away.

Early in May some 500 patients were evacuated by hospital train from Florence to Leghorn to provide beds for new casualties coming from across the Apennines, and later in the month approximately 800 more were flown from Florence to Naples to clear the 24th General Hospital for closing. Patients from Pratolino, Pistoia, and Montecatini continued to go by rail to Leghorn during June and July, as hospitals in those areas were contracted or as patients were screened for evacuation to the zone of interior, with a smaller number going direct to Naples by air.

ZI patients from Leghorn were sent to Naples by hospital ship. More than 1,800 were evacuated by this means in May, 550 in June, and over 800 in July. Both rail and hospital ship evacuation within the theater were discontinued in the latter month, all intratheater evacuation thereafter being by air. By this date only a relatively small number of long-term patients remained, and evacuation had been reduced to transportation of routine illness and injury cases among garrison troops to the nearest fixed hospital.

Evacuation to the Zone of Interior—An essential preliminary to redeployment of hospitals and other medical units in the Mediterranean was to reduce the number of patients in fixed hospitals as rapidly as possible. As early as 15 April 1945, when the Po Valley Campaign was just getting under way, the problem was studied with a view to speeding up the evacuation process. It was determined at that time that of the more than 15,000 patients then in MTOUSA hospitals, 2,400 more could be evacuated to the zone of interior on a 60-day policy than could be sent home on the 120-day policy then in effect. A 60-day policy, moreover, would increase future ZI dispositions by 65 percent.[8]

The evacuation policy was reduced accordingly to 60 days beginning on 1 May 1945. The change was immediately reflected in a sharp rise in ZI evacuation, which reached a total of 4,428 for U.S. Army patients for the month, compared with 1,761 in April. The backlog of ZI patients had been so far reduced by the end of May that one plane a day, carrying 18 litter patients, was deemed sufficient for priority cases. Early in July, when air transports with comfortable reclining seats became available, litter and ambulatory loads were alternated. Non-

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[8] Principal sources for this section are: (1) Final Rpt, Plans and Opns Off, Office of Surg, MTOUSA, 1945; (2) Theater ETMD's for May–Dec 45; (3) Med Sitreps, PBS, May–Oct 45.

TABLE 39—EVACUATION FROM MTOUSA TO THE ZONE OF INTERIOR
MAY–DECEMBER 1945

Month	U. S. Army			Other U.S.	Brazilians			Total
	Sea	Air	Total		Sea	Air	Total	
May	3,421	1,007	4,428	32	170	75	245	4,705
June	1,037	436	1,473	21	20	81	101	[a]1,595
July	1,756	463	2,219	50	6	72	78	[b]2,347
August	737	359	1,096	17	32	37	69	1,182
September	98	165	263	3	50	....	50	316
October	877	110	987	18	....	....	....	1,005
November	421	....	421	32	....	....	....	453
December	....	84	84	3	....	....	....	87

[a] Does not include 55 Russians evacuated to Bruck, Austria.
[b] Does not include 49 Russians evacuated to Bruck, Austria.

Source: (1) Final Rpts, Plans and Opns Off, Office of the Surg, MTOUSA, apps. 14, 15. (2) Theater ETMD's May-Dec 45. (3) Medical Sitreps, PBS, May–Oct 45.

priority cases continued to be evacuated by hospital ships and troop transports.

The arrangement under which all ZI evacuation by sea from southern France was under control of Allied Force Headquarters in Italy was terminated on 1 July, each theater thereafter being given a separate allocation by the War Department.

By the beginning of August, three months after the termination of hostilities, the number of patients in MTOUSA hospitals was low enough to justify reversion to a longer period of hospitalization in the theater, and a 90-day policy was instituted. On 9 August the War Department requested resumption of the 120-day policy, to coincide with that in effect in ETO. A MTOUSA request that 60 days be substituted for patients with point scores above the critical level was denied, and the 120-day policy went into effect on 19 August.

The last of the U.S. battle casualties was evacuated to the zone of interior in August, and the last of the Brazilian patients was returned to his homeland in September.

The only unusual incident in evacuating patients from the theater during this period occurred in June, when three planes of the 807th Medical Air Evacuation Transport Squadron carried the first consignment of Russians from the 105th Station Hospital at Pisa to Bruck, Austria, for repatriation. On arrival at Bruck, which was in the British zone but close to the area of Russian occupation, it was found that no preparations had been made to receive the patients, and the pilots were directed to go on to Vienna. There Russian authorities were not only reluctant to take the patients, they were almost equally reluctant to let the American planes and crews return to Italy.[9]

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[9] (1) Hist, 807th MAETS, 1945. (2) Annual Rpt, 105th Sta Hosp, 1945.

7029TH STATION HOSPITAL (ITALIAN) AT PISA

Evacuation from the Mediterranean theater to the zone of interior from May through December 1945 is summarized in Table 39.

Hospitalization and Repatriation of Prisoners of War

Throughout the campaign in Italy sick and wounded prisoners had been hospitalized in base installations in or adjacent to prisoner-of-war enclosures. Long-term cases had been evacuated to the German POW hospital near Oran or, until the end of October 1944, to the United States, but the bulk of them had been hospitalized in the Peninsular Base Section. The German-staffed POW hospital had been moved to Florence in March 1945, so that by the launching of the Po Valley Campaign all German prisoners in the Mediterranean theater were hospitalized when necessary by PBS.

As of this date, the installations primarily devoted to care of German prisoners were the 334th Station Hospital (German) at Florence, and the 103d Station at Pisa. The 81st Station at Leghorn had 250 T/O beds devoted to the care of prisoners, and the 262d Station at Aversa in the Naples-Caserta area became exclusively a POW hospital late in April. Small numbers of prisoners were hospitalized temporarily in most of the fixed hospitals in northern Italy. Italian prisoner and cobelligerent personnel continued to be cared for primarily at the 7029th Station Hospital (Italian), located from early March at Pisa.

As the Po Valley Campaign neared its climax, it was clear that prisoners would run into the hundreds of thousands, and that special provision, including the full utilization of all enemy medical facilities and personnel, would be necessary to hospitalize the sick and wounded among them. After the first captured hospital was dismantled and sent to the rear by the 10th Mountain Division, orders were issued late in April that all German hospitals and hospitalized personnel were to be left where they were, under suitable supervision. It was hoped that all German casualties could be cared for in these installations, but the speed with which the campaign came to a close and the disorder of the German forces, including the medical establishment, forced the transfer of additional thousands to base hospitals before the German medical service could be reorganized under Fifth Army control.

For medical purposes, no distinction was made between prisoners of war, defined as those taken in combat, and surrendered personnel, meaning those turned over by their commanders after the termination of hostilities. The two groups were given the best medical care available, both in the army area and in the base section. The only real distinction was that prisoners in base hospitals were cared for primarily by U.S. medical officers, with some assistance from German protected personnel, whereas in the army area all medical care after the first few days was by Germans in German hospitals, with American officers performing only a supervisory function.

When a complete count was made, as of 15 June, the U.S. share of the more than half million prisoners taken in Italy since Salerno was 299,124, of whom 147,227 were under Fifth Army control and 151,897 belonged to the Peninsular Base Section. The health of these prisoners, who were used to replace American and Italian service troops, was the responsibility of the Fifth Army and PBS surgeons.

Hospitalization in the Army Area

When Fifth Army took over the German medical service at the end of the war, field units, disorganized and for the most part inadequately staffed and supplied, were scattered over northern Italy. The main concentration of German fixed hospitals was at the resort town of Merano close to the Austrian border northwest of Bolzano, with a smaller concentration at Cortina d'Ampezzo, about forty miles east of Bolzano. In both of these areas, facilities were more than adequate. Hospitals were fully staffed and equipped to operate without U.S. assistance.[10]

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[10] Except as otherwise noted, this section is based on: (1) *Fifth Army History*, vol. IX; (2) Annual Rpt, Surg, Fifth Army, 1945; (3) Delaney, *Blue Devils*, pp. 234–46.

GERMAN MEDICAL CENTER IN THE ITALIAN ALPS, *the largest establishment of this type in Italy.*

In accordance with AFHQ instructions, all German hospitals and patients were held where they were when captured, pending detailed analysis of the situation. Colonel Camardella, designated by General Martin to supervise the hospitalization and evacuation of prisoners of war in the Fifth Army area, began an inspection of German medical facilities on 3 May. He found 10,000 patients at Merano, 5,000 at Cortina d'Ampezzo and another 5,000 in German field units and in American and civilian hospitals in the army area. There were surplus supplies at Merano, and equipment for making all kinds of prosthetic devices at a Luftwaffe hospital on Lake Como. The German medical high command at Merano, feeling deserted by its own army and in constant fear of reprisals by Italian partisans, was only too eager to co-operate.

Fifth Army kept enemy formations intact insofar as possible. Personnel not in organized units were grouped into self-sustaining organizations or attached to units still retaining some semblance of cohesion, and all were collected into concentration areas. The largest of these was set up at Ghedi, about twenty miles southwest of Desenzano and a somewhat shorter distance south of Brescia. A smaller concentration area was located at Modena, with others of lesser impor-

A HOTEL-HOSPITAL AT MERANO

tance at Parma, Piacenza, Montichiari, Brescia, and Verona. Sanitation of all prisoner enclosures in northern Italy was under the supervision of Maj. Frank H. Connel. In the first few days after the surrender it was necessary to remove truckloads of refuse, and to dust all prisoners with DDT powder for body lice. Typhus inoculations were also given.

Plans called for the early movement of all German prisoners to Ghedi and Modena, with a parallel concentration of medical facilities. Hospitals of 100 beds or less were to be merged with larger units, and patients were to be shifted as rapidly as possible to the larger hospitals. As soon as adequate lines of communication could be established, all long-term prisoner patients were to be concentrated at Merano.

During the period of consolidation, one or more medical officers of the 2d Auxiliary Surgical Group were stationed at each of the German hospitals to keep a check on the number of patients and their care. As had been the case at Merano, German doctors for the most part were so anxious to disassociate themselves from the Nazis that willing co-operation was assured. No attempts to evade or mislead in any particular were noted. A German increment, with two medical officers, was attached to Fifth Army headquarters, and the German

Director of Medical Services aided in the assignment and disposition of enemy medical units.

Through May the 85th and 88th Divisions guarded captured dumps in the mountains and moved surrendered German forces to initial concentration areas. Guard duty at Ghedi was performed by the 10th Mountain Division until 18 May, and thereafter by the 71st Antiaircraft Brigade with the 442d Infantry regiment under its command. The 88th Division took over all guard duties when it became the theater prisoner of war command. By this time all prisoners in the Fifth Army area had been moved to Ghedi or Modena. Some 80,000 entered the Ghedi cages in the week of 17–24 May alone. Modena was considerably smaller, being limited to about 20,000 by poor drainage.

Medical service at Modena was supplied by German doctors under supervision of the 15th Field Hospital's 3d Platoon. At Ghedi a 1,600-bed tent hospital was erected, staffed entirely by German medical units nominated by the German Director of Medical Services. Lt. Col. (later Col.) Harris Holmboe was General Martin's choice for medical coordinator in the Ghedi area. The Modena and Ghedi hospitals were to care for personnel in the prisoner of war enclosures only, and were not a part of the consolidation plan.

By the end of May about 80 percent of all German medical personnel, equipment, and patients had been transferred to Merano and Cortina d'Ampezzo. A German-staffed 1,500-bed convalescent hospital was established the first week of June at Villafranca, under supervision of the U.S. 3d Convalescent Hospital. Patients expected to recover within four weeks were transferred here from Merano and Cortina, and on recovery were moved to the Ghedi POW enclosure. By 15 June, six weeks after the victory, all German hospitals under Fifth Army control had been closed except Merano, Cortina, the convalescent facility, and the units serving the Modena and Ghedi areas. In another two weeks the hospitals at Cortina d'Ampezzo were also cleared to Merano and closed. The convalescent hospital was disbanded on 17 July. German medical supplies and equipment were stored at Merano and Ghedi, while German hospitals and other medical units, as they became surplus, were held at Ghedi for shipment to Germany or Austria on call.[11]

At the end of June there were about 12,000 patients in the German hospitals at Merano, administered by the 380th Medical Collecting Company of the 54th Medical Battalion. There were about 4,000 members of the German medical service in the town. Many items of medical supply were manufactured there, and 9,000 tons were stored. Supplies not needed to care for patients at Merano were shipped to PBS and to British bases for use in treatment of German personnel. The town itself was run by the 88th Division under strict military control.

Merano offered an excellent opportunity to evaluate German medicine, about which little had been known since the Nazi regime had come into power. Consultants and medical investigators from all parts of the theater and from

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[11] (1) Annual Rpt, Surg, Fifth Army, 1945. (2) Ltr, Stayer to CofS MTOUSA, 13 Jun 45. (3) Ltr, Standlee, Acting Surg, MTOUSA, to Deputy Theater Comdr and CofS MTOUSA, 17 Jul 45.

BETRETEN DES
LAZARETT-
GELANDES
VERBOTEN
AUFNAHME

WARD TENTS OF GERMAN POW HOSPITAL AT GHEDI, MAY 1945

the United States visited the area during the period of its heaviest operation. The conclusion was general that while the German medical service was adequate, its standards "were only mediocre in comparison with those of the Allied Forces in Italy." [12]

Hospitalization of Prisoners in PBS Units

For a week or more after the close of hostilities in Italy, prisoner of war patients continued to be evacuated to PBS hospitals, pending survey and reorganization of the German medical service in the Fifth Army area. The 103d Station Hospital at Pisa had a peak load of 1,162 prisoner patients on 5 May. The 37th General, when it opened in Mantova on 9 May, received more than 1,000 German patients by transfer from the 15th Evacuation Hospital, and others continued to be admitted to the 74th Station and the 6th General at Bologna.[13]

In order to relieve the pressure on hospitals in the forward area, about 700 prisoner patients were evacuated from the Po Valley to Florence, where the German-staffed 334th Station Hospital was expanding its capacity from 500 to

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[12] Annual Rpt, Surg, Fifth Army, 1945, p. 44.

[13] Principal sources for this section are: (1) Final Rpt, Plans and Opns Off, Office of Surg, MTOUSA; (2) Med Sitreps, PBS, May–Oct 45. (3) Theater ETMD's, May–Oct 45. (4) Unit rpts of individual hosps mentioned in the text; (5) ETMD's of individual hosps mentioned in the text.

POW Ward of
262d Station Hospital at Aversa

1,600 beds. This unit reached a peak census of 1,522 about the end of May. Both the 81st and 114th Station Hospitals in Leghorn took additional prisoner patients early in May, and three trainloads were moved from Leghorn to Naples. The bulk of these went to the 262d Station Hospital at Aversa, but one consignment of about 300 was temporarily cared for at the 21st Station in Naples, being transferred to the 262d before the middle of the month.

German medical personnel were utilized to the extent available by all of the PBS hospitals caring for prisoners. The 37th General inherited 70 German medical officers and 400 enlisted men from the 15th Evacuation. Only a few German protected personnel were used by the 74th Station and the 6th General in Bologna, but the 103d Station at Pisa had 26 German medical officers, 31 female nurses, and 401 enlisted men by the end of May. The 262d Station at Aversa had 121 German technicians who were used as assistants to U.S. personnel. In addition to these groups, fully organized and equipped German units, corresponding to the American field hospital platoons, were established in the various prisoner of war stockades under PBS control, where they furnished dispensary and infirmary service.

Prisoner admissions were predominantly battle casualties during the early part of May. Wounds had frequently been neglected or inadequately dressed, and the initial strain on surgical staffs of the hospitals treating them was severe. The 334th Station maintained a blood bank for prisoners, the donors being drawn from the PBS prisoner of war enclosures. At the same time the medical services of the various POW hospitals treated many conditions not common among U.S. troops that arose out of a background of malnutrition, insanitary conditions, and the older age level of the German Army.

The hospitalization of prisoner patients in PBS was stabilized by the first week of June, when the 88th Division became the MTOUSA prisoner of war command. In the Naples area, the 3d Platoon of the 35th Field Hospital relieved the 262d Station on 8 June, taking over 487 prisoner patients and a newly arrived German field unit consisting of 6 medical officers, a dentist, a pharmacist, an administrative officer, 4 nurses, 6 nurses' aides, and 82 enlisted men. The 114th Station in Leghorn was already closed, and the 81st Station in the same city and the 74th in Bologna were preparing to close. At the end of June the 37th General still had more than 1,000 POW patients, and the 6th General had about 800. Approximately 1,000 German patients remained in the 334th Station Hospital at Florence and about 750 in the 103d Station at Pisa. The 35th Field at Aversa had about 500 prisoner patients.[14]

Evacuation of long-term cases to Merano began on 25 June from the 37th General Hospital and from other PBS prisoner of war hospitals early in July. Thereafter the prisoner of war census in PBS hospitals declined rapidly. The 103d Station was relieved at Pisa by the 99th Field on 20 July, transferring 602 German patients at that time. By the end of the month 37th General had only 341 prisoner patients, and the census of the 334th Station was down to 570. Both of these hospitals were closed on 13 September, leaving the 35th Field at Aversa and the 99th Field at Pisa the only PBS units still hospitalizing prisoners of war.

On 25 September responsibility for all prisoners of war under U.S. control in Italy passed from MTOUSA to PBS. At that time there were 268 prisoner patients in the 99th Field Hospital and 453 in the 35th Field, with an additional 1,200 in German units under U.S. supervision. The bulk of these were the routine sick and injured from German service units operating in the theater.

All Italian personnel were formally released from prisoner of war status on 30 June and returned to control of the Italian Government. The 7029th Station Hospital (Italian), which had been hospitalizing Italian prisoners first in the Oran area and then at Pisa since the fall of 1943, closed to admissions at this time, and adminstrative control over all Italian personnel was vested in the Italian commanding officer of the hospital. All patients were transferred to civilian or Italian military hospitals on 19 July, and the unit closed the following day.[15]

Repatriation of Long-Term Patients

By the end of May the roundup of prisoners of war and surrendered personnel in Italy was complete. The next step was repatriation, beginning selectively with those whose labor was most essential to restore the German economy and those too old or too ill to be of any productive use to the Allies. Toward this end, a conference was held at Bolzano on 14–16 June between representatives of Allied Force Headquarters in Italy and those of Supreme Headquarters Allied Expeditionary Forces whose responsibility extended to Germany and Austria. Medical representatives at the conference were General Martin and Colonel Camardella for Fifth Army; Maj. (later Lt. Col.) Murray L. Maurer, MTOUSA hospitalization and evacuation officer, for the MTOUSA medical section; Maj. (later Lt. Col.) O. S. Williams of the British component for the medical section of AFHQ; and Col. Conn L. Millburn, Jr., executive officer to the army group surgeon, for the 12th Army Group. SHAEF headquarters sent no medical representative, but Millburn was familiar with ETO's problems and policies.[16]

Basic agreements were reached as to numbers to be repatriated on both sides, routes to be used, and tentative target dates; but the disposition of long-term patients was discussed only briefly at the conference level. More detailed discussions of this problem were held by the medical representatives meeting separately as a subcommittee, and tentative plans were agreed upon. AFHQ was prepared to begin receiving hospitalized Italians from Germany and Austria whenever SHAEF requested, since 4,000 beds were already available in Italian military hospitals. The transfer of German patients from Italy to SHAEF-controlled areas was a more complex problem. Occupation forces were still in the process of adjustment, and beds would not be available until all German patients could be evacuated from the Tyrol region. It was agreed that when SHAEF was ready, long-term German patients from Italy would be moved north by hospital train over the Brenner route, whose much-bombed rail line would soon be in usable condition. The target date selected was 10 July, at which time a meeting between the two medical staffs concerned was to be called by SHAEF to complete final arrangements.

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[14] Ltrs, Kane, Surg, MTOUSA POW Comd, to CG MTOUSA, 7 Jul, 6, 28 Sep, 45.

[15] (1) Hist, 7029th Sta Hosp (Italian), 27 Jul 45. (2) Med Sitreps, PBS, 15–31, Jul 45.

[16] Ltr, Maurer to Standlee, 19 Jun 45, sub: AF HQ–SHAEF Conference at Bolzano, 14–16 Jun 45. POW's, Mar 44–Sep 45.

By the time the promised conference of medical officers was held at Wiesbaden, Germany, on 12–13 July, SHAEF had been replaced by United States Forces, European Theater (USFET). At the Wiesbaden conference, the only representatives of the Allied Forces in Italy were Col. Albert A. Biederman, plans and operations officer in the MTOUSA medical section; and Col. Williams, who spoke for the British component of AFHQ. On the USFET side, forward headquarters was represented by Lt. Col. Joseph W. Batch and rear headquarters by Col. Fred H. Mowrey. Colonel Millburn and Lt. Col. James E. Sams represented the 12th Army Group, while Col. John Boyd Coates, Jr., and Col. Robert Goldson represented Third and Seventh Armies, respectively. The British-Canadian 21 Army Group was also represented in order to arrange the transfer of German patients under British control in Italy.[17]

The Wiesbaden conference resulted in a firm program for exchange of hospitalized prisoners between the Mediterranean and European theaters. All German patients in U.S. custody were to go by hospital train by the Brenner route to Third Army at Munich, Regensburg, and Furth; and to Seventh Army at Idstein. Beginning 25 July, one train every second day was to go to Third Army, and after 15 August daily trains were to alternate to Third and Seventh Armies. Three Italian hospital trains were to be furnished by Fifth Army (two initially), and two German trains were to be supplied by Third Army.

It was estimated that returns to duty would reduce the total of U.S.-controlled German patients to be repatriated to about 10,000. Beds vacated by these at Merano, up to 3,000, would be used to hospitalize temporarily sick and wounded Italians returned from Germany, for whom responsibility would pass to the Allied Commission on their arrival. Long-term prisoner patients from the Eighth Army zone in Italy were to go to the 21 Army Group under separate arrangements.

Evacuation to Germany began as planned on 25 July, and by the end of the month 1,254 patients had been moved to hospitals in the Third Army zone. The hospital trains used were staffed by German medical officers and corpsmen, under the supervision of an American Medical Administrative Corps officer. On the return trip, the trains carried Italian displaced persons to be hospitalized initially at Merano. The whole process worked so smoothly that Third Army agreed to take a trainload a day beginning 9 August instead of on alternate days. The Third Army quota was filled by the middle of August, all evacuees thereafter going to the Seventh Army.[18]

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[17] (1) Brief Minutes of Conference on Exchange of Medical Cases, Wiesbaden, 12 Jul 45. (2) Ltr, Biederman to Standlee, 20 Jul 45, sub: Exchange of Sick and Wounded Between the European and Mediterranean Theaters.

By the end of August the total number of long-term cases sent to Germany had climbed to 7,783, and stood at 9,751 as of 25 September, when the Peninsular Base Section took over responsibility from MTOUSA. For all practical purposes, the program was finished, since no more than 500 long-term German patients remained in the U.S. zone of Italy.

Redeployment and Inactivation of Medical Units

At the same time that U.S. long-term patients were being evacuated to the zone of interior on a 60-day policy and the burden of caring for prisoner of war patients was being reduced by consolidation of hospitals and repatriation of those with long hospitalization expectancy, American medical units were being systematically staged for shipment to the Pacific or prepared for inactivation. The Mediterranean theater was contracting even more rapidly than it had grown in the early days of the Italian campaign.

Disposition of Fifth Army Units

The readjustment of Medical Department personnel so that units destined for the Pacific would have only men with low adjusted service rating scores, plus the loss of high-score men to "carrier" units bound for the United States, posed a more difficult problem for the Fifth Army surgeon than even the care of prisoners of war. The Fifth had been the first United States field army activated on foreign soil in World War II, and had been in virtually continuous combat for 19 months when the war ended. Many of its components, including hospitals and medical battalions, had seen still earlier combat with other formations. There was, therefore, a heavy preponderance of high-score personnel in the Fifth Army medical service. Yet 2 of the 8 evacuation hospitals and one of the 3 field hospitals were scheduled for direct redeployment to the Pacific, and 2 more evacuations and a field were listed for indirect redeployment. Three of the 4 medical battalions in Fifth Army were also placed initially in Category II, with about the same proportions holding for other types of medical units.[19]

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[18] (1) Annual Rpt, Surg, Fifth Army, 1945. (2) Final Rpt, Plans and Operations Off, Office of Surg, MTOUSA. The figures used here, and in the following paragraph, are from letters, M. M. Kane, Surgeon, MTOUSA POW Command, to Commanding General, MTOUSA, 6, 28 September 1945, in Prisoners of War, March 1944–September 1945. These figures differ both from those given by the Fifth Army surgeon and from those in the theater ETMD for October 1945, but are believed to be the more accurate.

[19] Principal sources for this section are: (1) Annual Rpt, Surg, Fifth Army, 1945; (2) Final Rpt, Plans and Opns Off, Office of Surg, MTOUSA; (3) Theater ETMD's for May–Aug 1945; (4) Unit rpts of the individual med units mentioned in the text.

The first Fifth Army medical unit to go to the Montecatini redeployment center was the 94th Evacuation Hospital, which arrived on 16 May, a bare two weeks after the end of the war in Italy. The exigencies of the situation, however, required the 94th to go into operation for a time at Montecatini, although it was classified as II–A for direct redeployment to the Southwest Pacific. The 171st Evacuation, scheduled for redeployment to the Pacific by way of the United States, was in Montecatini on 29 May; the 161st Medical Battalion less its collecting and clearing companies, the 32d Field Hospital and the 170th Evacuation all arrived at the redeployment center the first week of June. The headquarters and headquarters detachments of the 162d and 163d Medical Battalions arrived just before the end of June.

By the end of May the Category II–A Medical units—the 94th and 170th Evacuation Hospitals, the 32d Field Hospital, and the 161st Medical Battalion—were staffed with low-score personnel as fully as was consistent with efficient operation. Other Category II units, including the medical battalions and medical detachments of the 91st and 10th Mountain Divisions, had had the bulk of their high-score personnel withdrawn during June, but low-score replacements were insufficient to bring the units up to Table of Organization strength.

By July the personnel situation in Fifth Army was critical. Low-score personnel to fill out the T/O's of units being redeployed to the still-active war against Japan had of necessity to be drawn from units scheduled for return to the United States and ultimate inactivation. But these Category IV units had already been stripped to a point at which further withdrawals would jeopardize their efficiency, and they were still needed to furnish medical service to the remaining combat formations. A further complication was the refusal of the War Department to accept the MTOUSA Table of Organization for separate collecting companies that were to be transferred to the Pacific. These companies had been operating with a medical officer and 4 MAC's. It was now necessary to make all of the 7 companies involved conform to the official Table of Organization, which called for 3 medical officers and 2 MAC's. The required officers were diverted from the 91st and 10th Mountain Divisions, and replaced from a group of 20 low-score medical officers procured from the European theater, but no more were available from that source. Fourteen Medical Administrative Corps second lieutenants were commissioned from among 60 enlisted applicants, but there remained a shortage of low-score officers in both corps, forcing the retention of high-score men.

The supply of low-score enlisted men was also critical by the end of July—so much so that a requirement for 300 general service enlisted men with point scores below 70, to be used as Pacific replacements, could only be met by drawing 100 men from units assigned to the strategic reserve and replacing them with high-score personnel from Category IV units.

The manpower problem was finally solved in early August. To relieve pressure on shipping, a change of policy was inaugurated whereby all Category IV units were to be inactivated in the theater rather than be shipped to the United States for inactivation. High-score personnel from Category IV that had been scheduled for early shipment and were already inoperative, were sent home as casuals, but those with middle-bracket scores—80 to 90 points—were transferred to late Category IV units, which were thus brought up to strength.

The process of redeployment, meanwhile, had been proceeding according to plan. The Fifth Army veterinary service passed out of existence on 30 June, when the Italian pack mule trains were disbanded and the four U.S.–Italian veterinary hospitals were turned over to the Italian Army. Two weeks later, on 14 July, the 171st Evacuation Hospital sailed for the Pacific by way of the United States. The 32d Field and the 170th Evacuation sailed on 17 and 25 July, respectively, direct to the Philippines; and the 161st Medical Battalion embarked on 7 August for the United States en route to a Pacific station. The 94th Evacuation sailed for the Southwest Pacific on 13 August, but was diverted at sea to the United States after word was received of the Japanese collapse.

On 20 August all Category II units still in the theater were ordered returned to the United States for disposition, creating a considerable morale problem since these had already been staffed with low-score personnel who were thus being sent home before the high-score men they replaced. Immediate steps were taken to readjust personnel once more, but not in time to alter the rosters of the 162d and 163d Medical Battalions, already aboard ship.

Other Fifth Army medical units were disposed of rapidly thereafter. The 38th Evacuation Hospital, which had originally been scheduled for return to the United States, had been at the Florence redeployment center since early July, and the 56th Evacuation, which was to be a Pacific reserve unit, had arrived at Montecatini on 6 August. The 38th was inactivated in the theater on 8 September. The 56th was sent home for inactivation early in October.

The 15th Evacuation and the 3d Convalescent both closed for redeployment on 20 August, while the 54th Medical Battalion and the 601st Clearing Company moved to Florence for final disposition on 25 August. The 33d Field Hospital, which had closed on 23 August, was inactivated on 25 September. Only the 15th Field Hospital, the 8th and 16th Evacuation Hospitals, and a few lesser units remained active in the army area when the transfer to PBS took place on 1 September.

Disposition of PBS Units

The redeployment of medical units assigned to the Peninsular Base Section followed a pattern similar to that in Fifth Army. The problem of personnel readjustment was equally difficult, with ten station hospitals and one field hospital in the II–A category for shipment in June, July, and August; and three station hospitals scheduled for transfer to the Pacific by way of the United States in July. A great deal of juggling was necessary, and a few medical officers with ASRS's above the critical level were still on the rosters when the hospitals sailed for their new assignments.[20]

The first PBS units to leave the Mediterranean theater under the redeployment plan were the 106th and 118th Station Hospitals, both of which sailed for Okinawa on 29 June. On 8 July the 52d Station left for indirect redeployment through the United States, and two weeks later the 262d Station and the 34th Field sailed for Manila. The 114th and 73d Stations sailed for the United States and ultimate transfer to the Pacific on 20 and 27 July, respectively.

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[20] Principal sources for this section are: (1) Final Rpt, Plans and Opns Off, Office of Surg, MTOUSA; (2) Med Sitreps, PBS, May–Oct 45; (3) Pers Ltr, Stayer to Kirk, 31 May 45; (4) Unit rpts of individual med units mentioned in the text; (5) AG record cards of units mentioned in the text.

August was the heavy month for redeployment of PBS hospitals, seven 500-bed stations sailing for Southwest Pacific ports between the 11th and 21st of the month. With the abrupt ending of the war in the Pacific, all of these were intercepted at sea and diverted to the United States for disposition. The hospitals concerned and their sailing dates were as follows: 74th Station, 11 August; 81st Station, 13 August, 103d Station, 15 August; 182d and 225th Stations, 16 August; 105th Station, 17 August and 60th Station, 21 August.

After the decision to inactivate Category IV units in the theater, PBS hospitals closed out rapidly. The 4th Field Hospital was inactivated on 10 September. September 15 saw the inactivation of the 7th Station Hospital, the 6th, 12th, and 26th General Hospitals, and the 41st Hospital Train. The 51st Medical Battalion and the 15th Medical General Laboratory were inactivated on 30 September and 25 October respectively. The 33d General Hospital was inactivated on 20 September, the 8th Evacuation ten days later, and the 154th Station on 1 October. The 35th Field Hospital and the 17th, 37th, and 70th General Hospitals were inactivated on 25 October, and the 16th Evacuation on 31 October. The veterinary hospitals and veterinary evacuation detachments assigned to PBS were disbanded between July and October.

The 2d Auxiliary Surgical Group, which had been divided between the Mediterranean and European theaters since the invasion of southern France, was reunited in Italy in June and was inactivated at the Florence redeployment center on 14 September.

After the 20 August policy order, only four PBS hospitals left the theater as organized units. These were the 32d, 40th, and 21st Station Hospitals, which sailed for the United States on 22, 24, and 26 September, respectively; and the 24th General, which sailed on 11 October. All four of these hospitals served as "carrier" units, transporting high-score personnel to the United States.

Effect of Redeployment on Supply Services

Not hospitals and medical battalions alone, but medical supplies and equipment as well were redeployed to the Pacific. Each hospital or other medical unit going out was completely reequipped before it embarked. In addition quantities of medical supplies were sent to Pacific ports without relation to the units that would ultimately use them. Supplies and equipment for this purpose were accumulated at the Naples and Leghorn depots as they were turned in by inactivated and nonoperating units.[21]

Early in the redeployment period all surplus equipment, including hospital

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[21] Principal sources for this section are: (1) Annual Rpt, Surg. Fifth Army, 1945; (2) Final Rpt, Plans and Opns Off, Office of Surg, MTOUSA; (3) Med Sitreps, PBS, May–Oct 45; (4) Unit rpts of individual med units mentioned in the text.

READYING MEDICAL SUPPLIES FOR TRANSSHIPMENT TO SOUTHWEST PACIFIC

expansion units, was turned in from both Fifth Army and PBS. As medical units closed for redeployment, all their supplies and equipment were turned in, and the medical material thus accumulated was reconditioned and packed for reissue at the depots. For field and evacuation hospitals from the army area, as much as 70 percent of the nonexpendable items had to be salvaged, and about 30 percent for base section units.

When the war ended in Italy, approximately 9,000 tons of medical supplies were divided almost equally between the Naples and Leghorn depots. Tonnage at Naples dropped to about 4,000 in mid-May, then climbed again to approximately 4,500 by mid-July as more hospitals closed in PBS South. Leghorn tonnage rose steadily to more than 6,000 by mid-July before substantial outshipments were made. Tonnage at both depots was unbalanced, however, and shortage lists grew as time went on, owing to the necessity of keeping hospitals operating at the same time that complete new assemblies for them were being made up and set aside. The end of the war with Japan removed the pressure and left the Mediterranean theater with no

Colonel Standlee

supply problem beyond that of storage until surpluses could be returned to the United States.

The activity of the supply depots did not preclude the redeployment of medical supply units themselves, though it did compel a change of schedule. The 12th Medical Depot Company, serving Fifth Army, was originally placed in Category II–A for movement to the Pacific in June, but was changed to Category IV when General Martin protested that the army would be left without any medical supply organization. The 12th was assigned to PBS along with other Fifth Army medical units on 1 September, and was attached at that time to the 232d Medical Service Battalion at Leghorn.

The Naples depot, although its tonnage was still climbing, was turned over to a detachment from Leghorn early in June in order to release the 72d Medical Base Depot Company for redeployment. The 80th Medical Base Depot Company, which had been operating the Bari supply depot for the Adriatic Base Command, closed on 10 July, and the 72d and 80th sailed together for Manila on 22 July. The 232d Medical Service Battalion, with the 60th and 73d Medical Base Depot Companies attached, continued to operate the main PBS depot at Leghorn and the subdepot at Naples throughout the redeployment period.

Close-out in the MTO

Organizational Changes

Through the summer and fall of 1945, while the bulk of the Allied Forces in Italy were being withdrawn, prisoners of war were being returned to their homes, and the medical service was being reduced to a minimum, various organizational changes were made to bring overhead operations into line with requirements. At the same time assignments were changed to make the best use of experienced officers and to replace higher with lower ranks as responsibilities contracted.[22]

In June Colonel Arnest left the theater, being succeeded as Peninsular Base Section surgeon by his deputy, Colonel Sweeney. Colonel Sweeney was succeeded in late September by Col. William W. Nichol, formerly commanding officer of the 37th General Hospital. At the army level, the transfer of General Martin and accession of Colonel Bruce as

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[22] Principal sources for this section are: (1) Munden, Administration of the Med Dept in MTOUSA, pp. 189–205; (2) Med Sitreps, PBS, Jun–Oct 1945.

Fifth Army surgeon has already been noted. At the theater level, General Stayer departed in June to assume the duties of health officer for occupied Germany. He was succeeded as MTOUSA surgeon by Colonel Standlee, who had been deputy surgeon since the organization of the theater. Colonel Biederman became Standlee's deputy in July without giving up his now greatly curtailed functions as plans and operations officer.

As of 1 October, Headquarters, Mediterranean Theater of Operations, United States Army, was formally separated from Allied Force Headquarters. On the same date Headquarters, Army Air Forces, MTO, was discontinued, the Army Air Forces Service Command passing to MTOUSA. The functions of the supply section of the MTOUSA surgeon's office were transferred simultaneously to PBS. Both shifts forecast the final consolidation a month later, when both the Adriatic Base Command and the MTOUSA medical section were discontinued. Colonel Standlee left the theater at that time, but Colonel Biederman remained until the transfer of functions to PBS was complete, well along in December. The Peninsular Base Section then became responsible for medical service for all U.S. forces remaining in the theater, whose boundaries now included Hungary and the Balkans. Colonel Nichol relieved Colonel Standlee late in the year, and thereafter performed the functions of theater surgeon as well as base surgeon.

The Occupation Period

Italy, because of its cobelligerent status, was never occupied in the same sense that Germany and Austria were. Because of border disputes between Italy and Yugoslavia, however, and of the claims of both nations to the important city of Trieste, it was necessary to retain some military forces in the province of Venezia Giulia until late 1947. The 88th Division, which had relieved the 34th at Udine in September 1945, remained as the occupation force and supplied personnel for the Trieste–United States Troops (TRUST), which took over occupation of the Free Territory of Trieste from the British in May 1947.[23]

During the 2-year period of occupation, medical support for the 88th Division gradually changed from combat to garrison type. The 313th Medical Battalion, organic to the division, maintained a collecting station in the vicinity of Tarviso, near the Austrian-Yugoslav-Italian border, in support of a combat team until mid-December 1945; and had a clearing station at Cividale, northeast of Udine, which soon took on the characteristics of a post hospital. Before the end of 1946 the medical battalion was operating aid stations that were more like dispensaries in rest areas as far away as Cortina d'Ampezzo and Venice.

The 15th Field Hospital was replaced at Udine in May 1946 by a newly activated station hospital, the 391st, with 400 beds. Evacuation from the 15th Field was by air to Leghorn or Naples, and from the 391st was by hospital train to Leghorn.

Fixed hospital support for the occupation force, as well as for scattered Air Forces and service units, continued to be provided by PBS, but on a steadily declining scale. With the closing out of the Adriatic Base Command on 1 November 1945, the 500-bed 61st Station Hospital was shifted from Foggia to Leghorn to replace the 64th General, which was preparing for inactivation. The 250-bed 55th Station moved simultaneously from Pisa to Foggia, where it was assigned to the Air Forces about 1 January 1946. The 300th General Hospital at Naples, the 34th Station at Rome, and the 99th Field at Pisa were the only other fixed hospitals in the theater.

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[23] Principal sources for this section are: (1) Theater ETMD's for Sep 45–Dec 46; (2) Annual Rpt, Med Activities, TRUST, 1947; (3) Delaney, *Blue Devils*, pp. 249–72; (4) Komer, Civil Affairs and Military Government in the Mediterranean Theater, ch. XV; (5) Unit rpts of med units mentioned in the text.

A major cutback in fixed bed strength occurred in May 1946, paralleling the shift from combat to garrison status of the 88th Division. The 99th Field Hospital closed on 1 May and the 300th General on the last day of the month, the latter being replaced by a new unit, the 200-bed 392d Station Hospital. At the same time, the 34th Station at Rome and the 55th Station at Foggia were reduced from 250 to 100 beds, the 55th being reassigned to PBS. As of 1 June 1946, PBS had 800 T/O beds: 100 in Foggia, 200 in Naples, and 500 in Leghorn; Rome Area had 100 beds; and the 88th Division had 400.

The supply service was also reorganized in May and June, when the 232d Medical Service Battalion, and the 60th and 73d Medical Base Depot Companies were inactivated. These units were replaced by the 339th Medical Supply Detachment, which was joined in August by the 57th Medical Base Depot Company. The 339th Medical Supply Detachment was inactivated in January 1947, leaving the 57th Medical Base Depot Company in sole command of the Leghorn depot.

Bed strength in the theater was further reduced early in 1947 by inactivation of the 392d Station Hospital in January and of the 55th Station in April. The 313th Medical Battalion was inactivated on 15 May.

In keeping with the contraction of base section functions, which were now almost exclusively concentrated in Leghorn, the Peninsular Base Section was disbanded in April 1947, and its installations and responsibilities were transferred to the Port of Leghorn organization. The former PBS–MTOUSA surgeon became Port of Leghorn–MTOUSA surgeon at this time.

Final Disposition of Medical Units

The first step toward a final closing out of the theater came with the signing of the Italian peace treaty on 10 February 1947. The treaty was not formally ratified until 15 September, but in anticipation of that event complete plans for phasing out of all U.S. military installations in Italy within 90 days of ratification of the treaty were drawn up.[24]

In accordance with the phase-out plans, the 7th Station Hospital—a 200-bed unit that had been activated at Trieste in May with personnel drawn from the 391st Station and the 88th Division—was turned over to TRUST on 19 September, immediately after news of ratification of the treaty was received. On the same day evacuation of patients from the 391st Station Hospital began, and the hospital was inactivated on 15 October. In Rome, evacuation of patients from the 34th Station Hospital was completed by 27 September, and the unit was inactivated on 9 October. The 61st Station at Leghorn, which had received patients evacuated from the 34th and 391st Stations, had cleared its own wards by the end of October and was inactivated 15 November 1947.

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[24] Phase-out Report of the Evacuation of Italy, 3 Dec 1947.

During the same period lesser medical installations were similarly disposed of. Supply surpluses and surplus personnel were transferred to the zone of interior, the European Command, or to TRUST, and the 57th Medical Base Depot Company was inactivated on 8 November. Food inspection detachments, malaria control detachments, ambulance units, and finally prophylactic platoons were disbanded as rapidly as their functions could be closed out.

On 3 December 1947, more than five years after the landings in North Africa, a single army transport sailed from Leghorn with all that was left of the U.S. forces in Italy, and the Mediterranean Theater of Operations, United States Army, ceased to exist.

CHAPTER XV

The Mediterranean in Retrospect

The Mediterranean was never regarded by American strategists as a decisive theater. Its major objectives were few and soon achieved. The commitment of U.S. forces in North Africa indirectly eased the pressure on the Stalingrad front, where the Russians were preparing to launch a winter offensive, and in America it gave a needed boost to public morale. The Tunisia Campaign ended the threat of Axis penetration into the Middle East, with its oil and its vital lines of communication. The conquest of Sicily knocked Italy out of the war and opened the Mediterranean to Allied shipping. But Italy, aside from the air bases it supplied for bombing the German homeland, was a liability, without enough strategic value to balance the concomitant responsibility for a large and predominantly destitute civilian population. The justification for the Italian campaign, after the Foggia airfields were secured, was that it could be so managed as to engage more German than Allied troops and thus contribute indirectly to the ultimate winning of the war. It was, in short, a diversion in force, in which the "force" was never quite enough for total victory but was always too great to invest in stalemate.

For such a campaign the theater was kept lean. Stripped again and again of its best troops and facilities to strengthen the build-up for Normandy and later to mount the invasion of southern France, replacements were inexperienced and slow in coming. The Medical Department through the whole period of active fighting was plagued by shortages—of personnel, of beds, of medical units, and of various supplies. Yet by virtue of ingenuity, skill, organization, improvisation, and endless hours of hard work, the medical mission was carried out with speed and precision at every level. The Mediterranean experience embraced in one theater almost every condition that would be met on any front in a war that enveloped the globe. The innovations, the modifications, the practical expedients that emerged from it became standing operating procedures as one crisis followed another. Passed along to army surgeons in Europe and the Pacific, they also became part of the collective wartime experience of the Medical Department and gave to the medical service in the Mediterranean an importance that the combat forces it supported never achieved.

Although United States Marines had stormed ashore on Guadalcanal and Tulagi in the Solomon Islands some three months before the Allied landings in North Africa, that invasion was in reinforced division strength only, with all medical support furnished by the Navy. TORCH was the first World War II amphibious operation of any size for U.S. Army troops, and the first in which Army field medical installations were tested in an assault. It succeeded only because determined opposition failed to develop. Had the French resisted strongly, the landing forces, spotted as they were along a thousand miles of African coast, would have been individually overwhelmed. Had the casualties been even moderately high, the medical troops in the landings would have been unable to handle them with the small number of beds and meager supplies at their disposal. Even the equipment available was sometimes useless under the conditions of the invasion. The standard army ambulance of the time, for example, proved to have inadequate traction on the loose sand of the African beaches, and its silhouette was dangerously high. Medical supplies were strewn across the landing beaches with no one detailed to collect, sort, and issue them. Plans for medical support of the operation had been drawn up, some in England and some in the United States, without co-ordination or sufficient knowledge of local conditions that might affect the accomplishment of the medical mission.

In subsequent landings on Sicily, at Salerno and Anzio, and finally over the white sands of the French Riviera, modifications and improvements were introduced to overcome the shortcomings of each earlier amphibious effort. For the invasion of Sicily, a clearing element was attached to each collecting company to enable the companies to furnish hospitalization until the regular hospitals arrived. Medical supply items were hand-carried ashore by medical troops, but litters and blankets were late in coming. This lag was corrected at Salerno, where medical depot personnel were on the D-day troop list. Additional medical supplies, in waterproof containers light enough to float, were carried onto the beaches by combat troops. At Anzio, field and evacuation hospitals, combat loaded, were added to the assault convoy. Four and a half months later, medical troops trained on the basis of Mediterranean experience (and not a few who were themselves veterans of one or more Mediterranean assaults) put their skills to the test in the invasion of Normandy. Medical support of the army that landed in southern France in mid-August 1944 was as near flawless as such a thing can be. The cumulative experience of Europe and the Mediterranean again helped to save American lives halfway around the world, on Leyte, Luzon, and Okinawa.

In addition to five major amphibious operations in the theater, Medical Department personnel supported combat and service activities in the Tunisian desert; in the steep, wooded mountains of Sicily and the sharper ridges of the Apennines in Italy; slogged through rain and mud, and shared with the infantry the perils of snow and ice; crossed flooded rivers and miasmic marshlands, and penetrated valleys still raked by enemy fire. Only the jungle was missing and even that was to be found in associated minor theaters.

These widely varying conditions of climate and terrain required many different means of bringing out the wounded. The versatile jeep was early fitted with litter racks and used to move casualties from places inaccessible either to wheeled or half-track ambulances. In one operation in Africa half-ton trucks with tires removed were run over rails, each truck carrying six litter patients. Both in Tunisia and in Sicily mules brought out the wounded in country too rough for vehicles of any kind. In the high mountains of northern Italy cable tramways made it possible to move casualties in minutes between points that would have taken hours on foot.

For the longer hauls, hospital ships and trains were employed. The Mediterranean theater pioneered in the use of transport planes to move casualties not only in rear areas but from hospitals far forward in the combat zone. Experiments with small Piper Cubs as ambulance planes were not successful enough to justify general use, but the helicopters later used for front-line evacuation in Korea were developed out of the same need and purpose. Necessity also taught the medical authorities in the Mediterranean that troop transports with hospital ship platoons attached to supply necessary medical service could safely move all but a limited few types of patients. It should be noted that neither the patient-carrying planes nor the transport vessels were marked with the Geneva Cross, but none were lost through enemy action. On the other hand, four properly identified and lighted hospital ships were deliberately bombed, two of them sinking.

The backbone and single indispensable element in the evacuation system was the litter bearer. It took strength, stamina, gentleness, and a high order of courage to collect the wounded on the field while the fighting, often enough, was still in progress, and by relays of four-man teams to carry the casualties sometimes as much as ten or twelve miles over mountain trails impassable to any vehicle, too steep even for mules. In the Italian campaign there were never enough litter bearers. In emergencies—which were frequent—cooks and bandsmen and company clerks were pressed into service, and there were many partisan volunteers whose aid was invaluable.

The stringencies of the theater forced the Medical Department at every echelon to stretch equipment and personnel to the utmost. Personnel assigned to hospitals temporarily not in operation, including those newly arrived and not yet assigned, were always attached to other units where their services could be utilized until required by their own installations. The cellular type of organization proved most effective because of its versatility and mobility. Surgical teams were an excellent example but only one of many in a genre that included malaria control units, veterinary food inspection detachments, and hospital ship platoons that were seen more often ashore than at sea. As the war progressed and replacements became more and more difficult to procure, medical officers were replaced in every permissible assignment by Medical Administrative Corps personnel. Such substitutions extended to medical supply, evacuation, and numerous purely administrative activities. Another successful expedient was the substitution of Women's Army Corps personnel for enlisted men in a variety of hospital tasks. Large numbers of Italian prisoners of war, available after the Axis collapse in Tunisia, were organized into service companies, and many of them assigned to the Medical Department where they proved themselves competent in almost all nonprofessional functions. Local civilians were also employed extensively in all Mediterranean areas to perform tasks that would otherwise have fallen to enlisted men.

One of the more successful expedients

devised was the use of clearing platoons to augment bed strength of field and evacuation hospitals. With additional attached personnel, these platoons were also employed as separate forward hospitals for specialized functions, including neuropsychiatric, venereal, and gastrointestinal cases. Such devices made it possible to hold in the army area men who would otherwise have been evacuated to the communications zone, and thereby to shorten materially the time lapse before return to duty. Mediterrannean experience tended to emphasize mobility and versatility. The more mobile a hospital was, the closer to the front lines it could be used. The best example is that of the field hospital platoon, deriving its strength from attached surgical teams. These platoons were first used in the Sicily Campaign as 100-bed forward surgical hospitals, reduced to 50 beds by the date of the southern France invasion. This experience contributed much to the development of the MASH (Mobile Army Surgical Hospital) units employed so effectively in Korea. Other devices successfully used to conserve Medical Department personnel were shortening lines of evacuation, and grouping fixed hospitals in concentrations to permit maximum use of skills by specialization, at the same time reducing the overhead by providing as many services as possible in common.

At the army and theater levels the Mediterranean experience underlined certain organizational principles. In a theater that was always a combined operation, the Americans were generally outranked by their British counterparts, which produced unnecessary friction. At the same time, it was the conviction of many officers in position to know that the United States medical service maintained higher standards than the British, and certainly medical skills, drugs, intruments, and equipment were more plentiful in American hospitals. U.S. soldiers hospitalized in British installations were quick to note the difference, which often led to a lowering of morale. At the army level Mediterranean experience demonstrated, as did the experience of every theater, the importance of giving the army surgeon a place on the staff of the commanding general. Similarly, the mission of the theater surgeon called urgently for a staff relationship with the theater commander. It was the absence of such a relationship that produced the awkward dichotomy between the theater medical organization and that of the Services of Supply. In the European theater and elsewhere the jurisdictional problem was resolved by giving both surgeons' jobs to the same man. In the Mediterranean, however, only personal cordiality between the individuals concerned, and a strong mutual desire to get on with the war, kept the medical service operating smoothly in both areas.

Emphasis in the Mediterranean was always on the role of Army medicine in conserving manpower—a mission often not fully appreciated by line commanders. In addition to treatment of the wounded and the sick, the Medical Department was responsible for preventing illness insofar as possible. In every war the United States has ever fought, the man-days lost through illness far exceeded those lost by enemy action. In World War II the ratio was approximately four days lost by disease and one by nonbattle injury for every day lost by combat wounds. Most of the illnesses were preventable. In the Mediterranean the major time wasters were malaria, common respiratory diseases, diarrhea and dysentery, and venereal diseases, all of them largely, and some of them completely, preventable. In the Sicily Campaign, to take only one example, malaria cases alone outnumbered battle wounds. Not that the prevention of malaria was beyond the knowledge of the theater and army medical sections at that time; atabrine was ordered and was supplied. The failure was on the part of the line commanders, who did not compel their men to take the rather unpleasant preventive drug. Similarly, the prevention of venereal disease was—and is—a command function. The treatment, thanks to penicillin, was progressively shortened so that man-days lost declined, but treatment was the lesser aspect of the problem.

Among familiar preventive measures in the Mediterranean were the standard innoculations for those diseases for which an immunity could be built up; destruction of insect vectors, such as mosquitoes, flies, and lice; educational measures; and continuous inspection of meat and dairy products. Outstanding achievements of preventive medicine in the theater were the speedy and effective elimination of the threat of typhus in Naples at the end of 1943; the steady reduction of malaria rates after the campaign in Sicily; and the practical control of other local scourges such as cholera and bubonic plague.

A major contribution of the Mediterranean theater medical service to the management of wounds was the provision of whole blood in the forward areas. From the blood bank established in Naples early in 1944 whole blood was trucked to the Cassino front and shipped to Anzio by LST. Beginning late in May, during the Rome-Arno campaign, a daily blood plane carried the precious cargo to the Fifth Army front for distribution to the field and other hospital units where surgery was being performed. The Naples blood bank also supported the invasion of southern France in August, by plane to Corsica and PT boat to the landing beaches.

Another area in which the theater medical section pioneered was that of combat psychiatry. Begun on an experimental basis in Tunisia and Sicily, a technique of front-line psychiatric treatment was fully evolved early in the Italian campaign. The key figure was the division psychiatrist, formally assigned in the spring of 1944. If a man could not be restored to fighting trim by rest, sedatives, and minimal therapy at the clearing station, he was sent back to a special neuropsychiatric hospital, in the army area but still in the combat zone, for more specialized treatment. Only as a last resort, and in the full knowledge that his combat days were probably over, was a psychiatric case evacuated to the communications zone.

The Mediterranean, then, was a theater in which the lessons of ground combat were learned by the Medical Department as much as by the line troops. For Army medicine the lessons were of general applicability: treat battle casualties, including psychiatric ones, as promptly as possible, which is to say in the division area; keep hospitals and clearing stations mobile; be prepared to augment table of organization personnel by attaching specialized teams or other cellular units; shorten evacuation lines by keeping hospitals as far forward as possible, and shorten the patient turnaround by treating as many as possible in the army area; never waste specialized skills by detailing men who possess them to work that others can do as well; treat disease as you treat battle wounds and anxiety states, as close to the front as you can, but use every means in your power to prevent disease.

No one will ever express more succinctly the creed of an army surgeon than did General Martin, Fifth Army Surgeon, throughout the Italian campaign. "The useless expenditure of life and suffering," General Martin wrote, "is as criminal as murder."

Appendix A

Hospitalization Statistics

Appendix A–1—Fixed Beds and Bed Ratios, Atlantic Defense Areas, July 1941–December 1945

Month	North Atlantic Bases			Eastern and Central Canada			Caribbean Defense Command			U.S. Army Forces South Atlantic		
	Troop Strength	T/O Beds	Ratio[a]	Troop Strength	T/O Beds	Ratio[a]	Troop Strength	T/O Beds	Ratio[a]	Troop Strength	T/O Beds	Ratio[a]
1941												
July	4,674	140	3.0	....	....	....	58,534	1,885	3.2	....	....	....
August	5,056	150	3.0	....	....	....	55,332	2,085	3.8	....	....	....
September	10,503	900	8.6	29	[b]	....	56,713	2,095	3.7	....	....	....
October	10,685	920	8.6	29	[b]	....	57,866	2,200	3.8	....	....	....
November	11,022	920	8.3	29	[b]	....	57,467	2,275	4.0	....	....	....
December	13,144	940	7.2	29	[b]	....	65,881	2,275	3.5	....	....	....
1942												
January	13,127	965	7.4	29	[b]	....	75,636	3,565	4.7	....	....	....
February	15,876	965	6.1	29	[b]	....	79,095	3,640	4.6	....	....	....
March	21,370	2,000	9.4	1,891	[b]	....	88,536	3,640	4.1	1,495	150	10.0
April	27,352	2,015	7.4	4,876	[b]	....	90,803	3,690	4.1	1,499	150	10.0
May	33,597	2,040	6.1	7,579	[b]	....	98,031	3,715	3.8	1,613	150	9.3
June	33,830	2,065	6.1	11,743	[b]	....	103,403	3,765	3.6	1,613	150	9.3
July	36,259	2,110	5.8	15,908	[b]	....	106,552	3,765	3.5	1,613	150	9.3
August	46,767	2,235	4.8	17,108	[b]	....	107,097	3,785	3.5	1,846	150	8.1
September	47,530	3,470	7.3	2,571	[b]	....	109,650	4,360	4.0	2,012	150	7.5
October	48,949	3,560	7.3	2,861	[b]	....	111,595	4,455	4.0	2,012	150	7.5
November	49,125	3,560	7.2	698	200	28.7	115,912	4,605	4.0	2,970	150	5.1
December	51,500	3,860	7.5	1,595	200	12.5	119,286	5,205	4.4	3,163	150	4.7
1943												
January	53,655	3,860	7.2	1,588	200	12.6	118,829	5,245	4.4	3,270	175	5.4
February	54,828	3,860	7.0	1,770	200	11.3	118,488	5,245	4.4	4,073	375	9.2

March	55,808	3,860	6.9	1,057	200	18.9	117,114	5,270	4.5	4,216	375	8.9
April	55,688	3,925	7.0	1,216	450	37.0	115,771	5,270	4.6	4,908	375	7.6
May	58,840	3,925	6.7	1,195	450	37.7	116,695	5,270	4.5	5,137	375	7.3
June	56,521	3,925	6.9	1,259	450	35.7	111,411	5,395	4.8	5,325	375	7.0
July	54,999	3,325	6.1	1,401	375	26.8	114,191	5,425	4.8	5,707	375	6.6
August	48,812	2,825	5.8	1,439	375	26.1	108,852	5,425	5.0	6,461	375	5.8
September	47,586	2,675	5.6	1,687	375	22.2	105,485	5,300	5.0	6,646	375	5.6
October	44,023	1,925	4.4	962	375	39.0	106,953	5,300	5.0	6,940	375	5.4
November	37,838	1,925	5.1	1,638	375	22.9	104,381	4,750	4.6	7,324	375	5.1
December	34,920	1,875	5.4	1,623	125	7.7	91,466	4,750	5.2	7,676	375	4.9
1944												
January	33,973	1,875	5.5	1,973	125	6.3	89,727	4,650	5.2	7,890	500	6.3
February	32,202	1,875	5.8	1,915	125	6.5	91,093	4,600	5.0	7,833	500	6.4
March	29,908	1,875	6.3	1,894	125	6.6	85,478	4,600	5.4	7,566	500	6.6
April	29,281	1,875	6.4	1,919	125	6.5	84,013	3,875	4.6	6,991	500	7.2
May[e]	30,868	1,875	6.1	2,229	125	5.6	78,519	3,525	4.5	6,525	500	7.7
June	30,374	1,875	6.2	2,532	125	4.9	76,911	3,000	3.9	6,012	500	8.3
July	25,458	1,175	4.6	2,006	[d]	0.0	72,812	3,000	4.1	6,070	450	7.4
August	24,673	1,175	4.8	2,010	[d]	0.0	73,380	3,000	4.1	5,986	450	7.5
September	25,151	1,175	4.7	2,000	[d]	0.0	71,126	3,000	4.2	5,413	450	8.3
October	24,741	1,175	4.7	1,990	[d]	0.0	69,835	3,000	4.3	5,041	450	8.9
November	25,657	1,175	4.6	2,030	[d]	0.0	71,609	2,800	3.9	4,996	350	7.0
December	23,098	1,075	4.7	2,034	[d]	0.0	70,637	2,650	3.8	5,006	350	7.0
1945												
January	22,983	1,025	4.5	2,014	[d]	0.0	70,787	2,550	3.6	4,907	350	7.1
February	21,357	1,025	4.8	2,016	[d]	0.0	69,368	2,550	3.7	4,921	350	7.1
March	21,718	775	3.6	2,020	[d]	0.0	66,585	2,550	3.8	5,153	300	5.8
April[e]	21,405	775	3.6	2,016	[d]	0.0	67,750	2,550	3.8	5,072	300	5.9
May	20,669	775	3.7	2,079	[d]	0.0	67,923	2,550	3.8	6,058	300	5.0
June	19,284	775	4.0	2,166	[d]	0.0	76,422	2,550	3.3	10,095	300	3.0
July	19,009	725	3.8	2,156	[d]	0.0	79,143	2,550	3.2	10,283	300	2.9
August	16,201	675	4.2	1,950	[d]	0.0	75,564	2,500	3.3	10,175	300	2.9
September	11,965	475	4.0	1,560	[d]	0.0	69,842	2,500	3.6	6,939	300	4.3
October	8,801	450	5.1	1,217	[d]	0.0	53,303	2,500	4.7	....	....	....
November	8,207	450	5.5	989	[d]	0.0	46,775	2,500	5.3	....	....	....
December	7,386	450	6.1	648	[d]	0.0	41,092	2,500	6.1	....	....	....

See footnotes next page.

APPENDIX A–1—FIXED BEDS AND BED RATIOS, ATLANTIC DEFENSE AREAS JULY 1941–DECEMBER 1945—*Continued*

[a] Ratio of T/O beds to troop strength; also defined as percentage of the command for which beds were available.

[b] Hospitalization by Corps of Engineers and in Air Corps dispensaries. Canadian hospitals available.

[c] In May 1944, the format of the monthly Strength of the Army reports was modified so as to credit attached personnel in overseas areas to commands existing in the zone of interior instead of to the areas where they were stationed. Some of the figures given after May 1944 were not, therefore, entirely comparable with corresponding figures for earlier dates. Further, the Strength report for May does not give a breakdown of attached stength in foreign commands. Figures corrected to include Air Transport Command personnel—the bulk of attached strength in areas included in this table—and a much smaller group of other personnel, are determined by various methods. The average ATC strength on the North Atlantic Bases for June–September 1944 was 5,378. This figure added to the given assigned strength of 25,492 for May 1944, gives an adjusted strength of 30,868. In Eastern and Central Canada, adjusted strengths for March–April 1944 and May–June 1945 give an average total of 2,014, while the average of assigned strength given for July 1944–April 1945 was 402. The difference of 1,612 represents the average attached strength. This figure is added to the actual assigned strength to estimate the adjusted total strength for May 1944–April 1945. In the Caribbean Defense Command, the average of adjusted strength for March–April and June–August 1944 is 78,519, which is used for May 1944. Using the same formula and time span, the adjusted strength of U.S. Army Forces in the South Atlantic was estimated for May 1944 as 6,525.

[d] Dispensary beds only. Canadian hospitals available.

[e] Includes North Atlantic Wing, Air Transport Command.

Source: Strength of the Army; unit reports of hospitals. Strength figures for July 1941 through May 1944 from Time Series in Strength of the Army, 1 November 1947. Figures for June 1944 through December 1945 from monthly issue of Strength of the Army, corrected to include Air Transport Command personnel.

APPENDIX A–2—FIXED BEDS AND BED RATIOS, AFRICA AND THE MIDDLE EAST (INCLUDES PERSIAN GULF COMMAND), JUNE 1942–DECEMBER 1945

Month	Troop Strength	T/O Beds	Ratio
1942			
June	217	550	253.5
July	1,536	550	35.8
August	9,045	550	6.1
September	9,729	800	8.2
October	16,989	800	4.7
November	19,856	2,700	13.6
December	30,850	3,450	11.2
1943			
January	36,354	3,850	10.6
February	42,327	4,500	10.6
March	54,757	5,300	9.7
April	55,785	5,850	10.5
May	62,194	5,850	9.4
June	66,077	6,600	10.0
July	66,483	6,600	9.9
August	59,626	6,500	10.9
September	59,384	6,050	10.2
October	55,033	6,050	11.0
November	51,699	5,375	10.4
December	50,553	5,375	10.6
1944			
January	45,856	4,675	10.2
February	47,224	4,025	8.5
March	45,548	4,025	8.8
April	45,251	4,025	8.9
May	39,077	4,025	10.3
June	[a]49,306	4,025	8.2
July	[a]49,268	3,625	7.4
August	[a]51,021	3,625	7.1
September	[a]51,581	3,650	7.1
October	[a]52,522	3,650	6.9
November	[a]52,626	3,650	6.9
December	[a]54,733	3,250	5.9
1945			
January	[a]53,851	3,250	6.0
February	[a]46,569	2,700	5.8
March	[a]48,877	3,050	6.2
April	[a]45,352	2,800	6.2

APPENDIX A-2—FIXED BEDS AND BED RATIOS, AFRICA AND THE MIDDLE EAST—*Contd.*

Month	Troop Strength	T/O Beds	Ratio
May	[b]52,754	2,300	4.4
June	[b]51,492	1,750	3.4
July	[b]46,848	1,750	3.7
August	[b]43,554	1,575	3.6
September	[b]37,470	1,475	3.9
October	[b]31,206	1,450	4.6
November	[b]19,788	1,250	6.3
December	[b]16,390	900	5.5

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[a] Figures for Air Transport Command personnel of Central African Division and of North African Division added. North African Division includes MTO, and there is undoubtedly some duplication, since MTO figures include Air Forces. Figures do not permit differentiation, however, and the great bulk of the ATC personnel in this area were in Africa. It has therefore been deemed best to include them here. See Strength of the Army, June 1944–April 1945.

[b] Figure includes both assigned and attached personnel. Air Transport Command personnel fall into the "attached" category.

Source: Strength of the Army; unit reports of individual hospitals. Ratio is percentage of troop strength for which beds were available.

APPENDIX A–3—BED STRENGTH AND BED OCCUPANCY, NORTH AFRICAN COMMUNICATIONS ZONE, NOVEMBER 1942–FEBRUARY 1945

Date	Mediterranean Base Section			Atlantic Base Section			Eastern Base Section		
	T/O Beds	Beds Established	Beds Occupied	T/O Beds	Beds Established	Beds Occupied	T/O Beds	Beds Established	Beds Occupied
1942									
30 November	1,750	n.a.	n.a.	750	n.a.	n.a.	....	....	....
31 December	5,750	n.a.	n.a.	2,150	n.a.	n.a.	....	....	....
1943									
31 January	6,250	3,307	2,270	2,150	1,103	942	....	....	....
28 February	7,250	4,549	3,560	3,150	1,726	1,383	500	434	218
31 March	5,750	5,575	4,471	5,075	3,027	2,023	2,750	1,542	1,092
30 April	5,250	7,032	5,976	5,925	4,215	2,760	4,000	2,837	2,120
31 May	12,450	8,615	7,129	7,025	5,591	3,832	5,250	2,750	2,732
30 June	10,050	14,080	8,213	6,275	6,008	5,097	7,500	7,116	4,262
31 July	7,300	14,425	8,010	4,775	6,248	4,064	12,000	12,228	8,231
31 August	6,000	15,194	13,422	3,775	3,366	2,316	12,000	10,550	7,655
30 September	6,500	18,292	10,456	3,275	3,714	2,437	12,000	12,241	10,574
31 October	9,500	19,492	12,573	2,775	3,714	1,072	12,250	15,650	9,646
30 November	10,500	14,484	9,286	2,775	1,650	1,063	9,750	14,750	11,588
31 December	7,500	15,383	10,509	1,525	1,885	1,014	9,250	15,110	11,374
1944									
31 January	7,500	14,541	10,108	1,525	1,885	1,283	9,000	13,775	12,093
29 February	7,000	13,864	8,274	1,525	1,885	1,205	8,500	12,750	7,396
31 March	6,500	13,200	6,334	1,525	1,885	834	7,000	6,500	3,605
30 April	6,250	12,113	6,302	1,525	1,885	557	7,000	4,000	2,360
31 May	6,000	11,650	5,993	1,525	850	384	4,000	1,000	451
30 June	7,000	9,650	5,833	275	600	433	2,000	1,000	310
31 July	6,500	9,600	4,631	275	600	484	1,000	500	224
31 August	5,750	7,150	4,424	275	350	[a]150	1,000	250	214
30 September	2,250	5,950	2,989	275	350	[a]192	250	250	172
31 October	1,750	2,750	333	275	350	[a]212	250	250	187
30 November	775	1,600	666	....	....	....	....	....	....
31 December	775	1,100	332	....	....	....	....	....	....
1945									
31 January	525	850	344	....	....	....	....	....	....
28 February	425	750	359						

[a] Estimate.

Source: T/O beds complied from unit reports. Beds established and beds occupied from daily bed status reports. Does not include mobile or convalescent beds.

APPENDIX A-4—BED STRENGTH AND BED OCCUPANCY, MEDITERRANEAN ISLANDS AUGUST 1943—APRIL 1945

Date	Island Base Section			Northern Base Section			Allied Garrison on Sardinia		
	T/O Beds	Beds Established	Beds Occupied	T/O Beds	Beds Established	Beds Occupied	T/O Beds	Beds Established	Beds Occupied
1943									
31 August	2,350	[b]2,350	[c,d]1,822	....	....	....	....	....	....
30 September	3,450	[b]3,450	[a]2,100	....	....	....	....	....	....
31 October	3,700	[b]3,700	[c]2,438	....	....	....	....	....	....
30 November	2,150	[b]2,150	[c]1,516	....	....	....	....	....	....
31 December	2,150	2,951	1,752	....	....	....	....	....	....
1944									
31 January	1,000	1,900	990	300	200	120	....	....	....
29 February	1,000	1,790	919	300	220	181	....	....	....
31 March	1,000	450	185	1,300	1,070	704	....	....	....
30 April	1,000	450	294	1,550	1,697	822	350	[a]850	[a]500
31 May	400	850	413	1,550	1,958	852	350	[a]850	[a]500
30 June	400	850	233	1,550	1,950	811	600	884	428
31 July	....	....	....	1,550	1,950	907	600	884	445
31 August	....	....	....	1,550	1,825	637	600	750	313
30 September	....	....	....	800	700	490	600	750	285
31 October	....	....	....	1,000	677	545	....	....	....
30 November	....	....	....	1,000	1,150	523	....	....	....
31 December	....	....	....	1,000	965	514	....	....	....
1945									
31 January	....	....	....	1,000	1,000	405	....	....	....
28 February	....	....	....	1,000	500	362	....	....	....
31 March	....	....	....	500	750	245	....	....	....
30 April	....	....	....	500	500	27	....	....	....

[a] Estimate.

[b] Not available. T/O figure used.

[c] From Seventh Army bed status reports, excluding clearing stations.

[d] Figure for 20 August 1943.

Source: T/O beds from unit reports. Beds established and beds occupied from daily bed status reports. Does not include mobile or convalescent beds.

APPENDIX A–5—BED STRENGTH AND BED OCCUPANCY, ITALIAN COMMUNICATIONS ZONE, OCTOBER 1943–SEPTEMBER 1945

Date	Peninsular Base Section			AAFSC–Adriatic Base Command			Rome Area, MTOUSA		
	T/O Beds	Beds Established	Beds Occupied	T/O Beds	Beds Established	Beds Occupied	T/O Beds	Beds Established	Beds Occupied
1943									
31 October	6,600	[a]2,100	[b]2,000	....	....	....	....	....	....
30 November	8,100	[a]8,100	[b]7,600	[c]2,100	415	415	....	....	....
31 December	12,850	14,661	11,804	[d]3,000	1,518	863	....	....	....
1944									
31 January	13,650	24,700	16,762	[e]3,300	3,200	2,075	....	....	....
29 February	14,650	25,414	19,078	[e]3,300	3,350	2,620	....	....	....
31 March	15,650	26,506	19,512	[e]3,300	3,100	2,563	....	....	....
30 April	15,650	23,989	15,453	2,950	2,650	1,872	....	....	....
31 May	20,150	31,935	27,827	2,950	2,650	1,970	....	....	....
30 June	30,900	37,300	27,421	3,450	3,150	2,072	....	....	....
31 July	32,150	39,200	28,341	3,450	3,150	2,182	....	....	....
31 August	31,650	38,200	24,359	3,200	2,900	2,108	....	....	....
30 September	27,650	27,050	21,084	3,200	2,900	2,132	....	....	....
31 October	22,650	30,450	26,665	3,200	2,900	2,260	....	....	....
30 November	24,150	27,950	22,628	3,200	2,900	2,268	....	....	....
31 December	23,650	26,050	18,015	3,200	2,900	2,033	500	750	665
1945									
31 January	23,650	30,234	18,030	3,200	2,900	2,128	500	898	565
28 February	23,650	31,403	16,425	3,200	2,900	2,008	500	750	366
31 March	24,300	27,867	13,611	3,700	3,168	1,730	500	750	308
30 April	23,800	30,400	17,713	4,200	3,900	1,663	500	750	253
31 May	24,300	29,437	12,191	3,700	3,100	1,163	250	250	16
30 June	19,050	20,115	9,555	2,900	2,700	977	250	250	124
31 July	13,550	14,565	6,228	2,400	2,138	701	250	250	185
31 August	11,300	12,655	4,957	2,400	2,400	413	250	250	145
30 September	9,400	9,360	3,880	900	500	235	250	250	122

[a] Not available. T/O figure used.

[b] Approximate, calculated from graph in Annual Report, PBS, 1943.

[c] Includes 250 T/O beds on Sardinia.

[d] Includes 350 T/O beds on Sardinia and 100 T/O beds on Corsica.

[e] Includes 350 T/O beds on Sardinia.

Source: T/O beds compiled from unit reports. Beds established and beds occupied are from daily bed status reports, unless otherwise noted. Does not include mobile or convalescent beds.

APPENDIX A–6—FIXED BED STRENGTH AND BED OCCUPANCY, MEDITERRANEAN THEATER, NOVEMBER 1942–SEPTEMBER 1945

Date	Troop Strength [a]	Authorized Beds [b]	T/O Beds [c]	Bed Ratio [d]	Beds Established [e]	Beds Occupied [e]
1942						
30 November	128,560	7,714	2,500	1.9	[f]	[f]
31 December	227,092	13,626	7,900	3.5	[f]	[f]
1943						
31 January	260,771	15,647	8,400	3.2	4,410	3,212
28 February	298,545	17,913	10,800	3.6	6,709	5,161
31 March	344,488	20,669	13,075	3.8	10,144	7,586
30 April	395,461	23,728	15,175	3.8	14,084	10,856
31 May	483,172	28,990	24,725	5.1	16,956	13,693
30 June	520,087	31,205	23,825	4.6	27,204	17,572
31 July	528,608	31,716	24,075	4.6	32,901	20,305
31 August	545,740	32,744	24,125	4.4	31,460	25,215
30 September	610,965	36,658	25,225	4.1	36,947	25,567
31 October	632,744	41,761	34,825	5.5	41,406	27,929
30 November	584,596	38,583	35,375	6.1	42,049	31,468
31 December	597,658	39,445	36,275	6.1	51,508	37,316
1944						
31 January	621,831	41,041	36,275	5.8	60,201	43,431
29 February	642,658	42,415	36,275	5.6	59,273	39,673
31 March	670,234	44,235	36,275	5.4	52,711	33,737
30 April	697,785	46,054	36,275	5.2	47,634	28,160
31 May	723,552	47,754	36,925	5.1	51,743	38,390
30 June	717,693	47,368	46,175	6.4	55,384	37,541
31 July	724,057	47,788	45,525	6.3	55,884	37,174
31 August	742,700	49,018	44,025	5.9	51,675	32,205
30 September	712,915	47,052	[g]43,775	6.1	[h]41,950	[i]31,344
31 October	712,218	47,006	[j]42,875	6.0	[k]49,859	[l]40,579
30 November	495,497	32,703	29,125	5.9	33,600	26,085
31 December	498,675	32,913	29,125	5.8	31,765	21,559

APPENDIX A-6—FIXED BED STRENGTH AND BED OCCUPANCY, MEDITERRANEAN THEATER, NOVEMBER 1942—SEPTEMBER 1945—*Continued*

Date	Troop Strength [a]	Authorized Beds [b]	T/O Beds [c]	Bed Ratio [d]	Beds Established [e]	Beds Occupied [e]
1945						
31 January	507,668	33,506	28,875	5.7	35,882	21,472
28 February	498,120	32,876	28,775	5.8	36,303	19,520
31 March	497,427	32,830	29,000	5.8	32,535	15,894
30 April	493,876	32,596	29,000	5.9	35,550	19,656
31 May	452,214	29,846	28,300	6.3	32,787	13,370
30 June	408,714	26,975	22,200	5.4	23,065	10,656
31 July	356,529	23,531	16,200	4.5	16,953	7,114
31 August	248,802	16,421	13,950	5.6	15,305	5,515
30 September	193,894	7,755	10,550	5.4	10,110	4,237

[a] From Strength of the Army, STM-30.

[b] 6 percent of troop strength through September 1943; 6.6 percent of troop strength to 15 September 1945; thereafter 4 percent of troop strength.

[c] Compiled from unit reports. Does not include mobile hospitals, except when acting as fixed units assigned to a base section. Does not include convalescent beds.

[d] Ratio of T/O beds to troop strength.

[e] From daily bed status reports of the theater.

[f] Not available.

[g] Includes 8,750 T/O beds in southern France.

[h] Includes 4,000 beds established in southern France.

[i] Includes an estimated 4,000 beds occupied in southern France.

[j] Includes 13,750 T/O beds in southern France.

[k] Includes 12,482 beds established in southern France.

[l] Includes 10,377 beds occupied in southern France.

Source: Tables A-3, A-4, A-5. Southern France data from 1944 Annual Reports, Delta Base Section, CONAD, and individual hospitals.

Appendix B

PRINCIPAL MEDICAL UNITS ACTIVE IN THE MEDITERRANEAN THEATER OF OPERATIONS, THE ATLANTIC DEFENSE AREAS, AFRICA, AND THE MIDDLE EAST

GENERAL HOSPITALS

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
3d 1000/1500 beds	12 May 43 MTO	Tunisia: Mateur Italy: Caserta France: Aix-en-Provence	Rome-Arno	To ETO 20 Nov 44
6th 1000/1500 beds	20 Feb 43 MTO	French Morocco: Casablanca Italy: Rome, Bologna	Rome-Arno Po Valley	Inactivated 15 Sep 45
12th 1000/2000 beds	26 Dec 42 MTO	Algeria: Aïn et Turk Italy: Naples, Rome, Leghorn	Naples-Foggia Rome-Arno	Inactivated 15 Sep 45
17th 1000/1500 beds	28 Oct 43 MTO	Italy: Naples	Naples-Foggia Rome-Arno	Inactivated 25 Oct 45
21st 1000/2000 beds	6 Dec 42 MTO	Algeria: Sidi Bou Hanifia Italy: Naples France: Mirecourt	Naples-Foggia	To ETO 20 Nov 44
23d 1000/2000 beds	28 Oct 43 MTO	Italy: Naples France: Vittel	Naples-Foggia Rome-Arno	To ETO 20 Nov 44
24th 1000/1500 beds	4 Sep 43 MTO	Tunisia: Bizerte Italy: Grosetto, Florence	Rome-Arno North Apennines	To ZI 11 Oct 45
26th 1000/1500 beds	1 Feb 43 MTO	Algeria: Constantine Italy: Bari	Tunisia Naples-Foggia Rome-Arno	Inactivated 15 Sep 45
33d 1000/1500 beds	15 Aug 43 MTO	Tunisia: Bizerte Italy: Rome, Leghorn	Rome-Arno North Apennines	Inactivated 20 Sep 45
36th 1000/2000 beds	4 Sep 43 MTO	Italy: Caserta France: Aix-en-Provence, Dijon	Naples-Foggia Rome-Arno Southern France	To ETO 20 Nov 44

GENERAL HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
37th 1000/1500 beds	5 Sep 43 MTO	Tunisia: Mateur Italy: Naples, Mantova	Rome-Arno Po Valley	Inactivated 25 Oct 45
38th 1000/750/500 beds	31 Oct 42 USAFIME	Egypt: Heliopolis French Morocco: Casablanca	None in USAFIME	Redesignated 384th Station Hospital 1 Jan 46
41st 1000/600 beds	1 Dec 42 CDC (Designated in place; was unnumbered 500-bed Station Hosiptal from Sep 42)	Trinidad: Fort Read	None in CDC	Redesignated 359th Station Hospital 25 Nov 43
43d 1000/1500 beds	2 Sep 43 MTO	Algeria: Assi Bou Nif France: Aix-en-Provence	Rome-Arno	To ETO 20 Nov 44
45th 1000/1500 beds	29 Mar 43 MTO	French Morocco: Rabat Italy: Naples, Bari	Naples-Foggia Rome-Arno	Inactivated 30 Sep 45
46th 1000/1500 beds	2 Sep 43 MTO	Algeria: Assi Bou Nif France: Besançon	Southern France	To ETO 20 Nov 44
64th 1000/1500 beds	4 Sep 43 MTO	Tunisia: Ferryville Italy: Caserta, Leghorn	Rome-Arno North Apennines	Inactivated 20 Dec 45
70th 1000/1500 beds	2 Sep 43 MTO	Algeria: Assi Bou Nif Italy: Pistoia	North Apennines	Inactivated 25 Oct 45
113th 1000/750/500 beds (See also 113th Station Hospital)	7 Sep 43 PGC (Redesignated in place; was 113th Station Hospital)	Iran: Ahwaz, Khorramshahr	None in PGC	Disbanded 21 Aug 45

GENERAL HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
161st 600 beds (See also 298th Station Hospital)	1 Jun 44 CDC (Redesignated in place; was 298th Station Hospital)	Puerto Rico: San Juan	None in CDC	Inactivated 15 Jan 47
208th 1000/750 beds	3 Mar 42 IBC	Iceland: Helgafell	None in IBC	Redesignated 327th Station Hospital 2 July 43
210th 1000 beds	13 Jan 42 CDC	Canal Zone: Fort Gulick	None in CDC	Redesignated 368th Station Hospital 1 Apr 44
218th 750 beds	13 Jan 42 CDC	Canal Zone: Fort Clayton	None in CDC	Redesignated 333d Station Hospital 1 Apr 43
262d 750 beds (See also 333d Station Hospital)	1 Apr 44 CDC (Redesignated in place; was 333d Station Hospital)	Canal Zone: Fort Clayton	None in CDC	Inactivated 7 Feb 47
300th 1000/2000 beds	4 Sep 43 MTO	Italy: Naples	Naples-Foggia Rome-Arno	Inactivated 31 May 46

STATION HOSPITALS

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
4th 100/25 beds	23 Dec 42 USAFCC	Manitoba: Churchill	None in USAFCC	To ZI 6 Jan 44
6th 150/75 beds	20 Apr 43 USAFEC	Labrador: Goose Bay	None in USAFEC	To ZI 18 Jul 44
7th 750/200 beds	22 Nov 42 MTO	Algeria: Oran Italy: Leghorn Free Territory: Trieste	Rome-Arno North Apennines	Inactivated 15 Sep 45 Reactivated 1 May 47 as 200-bed unit To TRUST 19 Sep 47

STATION HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
11th 250 beds	24 Sep 41 IBC	Iceland: Helgafell, Kaldadharnes, Reykjavík	None in IBC	Combined with 72d Station Hospital and redesignated 366th Station Hospital 6 Dec 43
14th 75 beds	31 Aug 42 IBC	Iceland: Seydhisfjördhur, Helgafell	None in IBC	Combined with 15th Station Hospital 167th Station Hospital and redesignated 365th Station Hospital 6 Dec 43
15th 75 beds	31 Aug 42 IBC	Iceland: Búdhareyri, Akureyri, Helgafell	None in IBC	Combined with 14th Station Hospital, 167 Station Hospital and redesignated 365th Station Hospital 6 Dec 43
19th 250 beds	16 Dec 42 PGC	Iran: Khorramshahr, Tehran	None in PGC	Inactivated 27 Dec 45
21st 500 beds	15 Nov 42 USAFIME	Eritrea: Mai Habar Palestine: Tel Litwinsky Iran: Khorramshahr Italy: Naples	None in USAFIME, PGC, or MTO	To PGC May 43 To MTO 7 Mar 45 To ZI 26 Sep 45
23d 250/500 beds	23 Aug 42 USAFICA	Belgian Congo: Léopoldville French Morocco: Port-Lyautey Algeria: Assi Bou Nif France: Épinal	None in USAFICA or MTO	To MTO Apr 43 To ETO 20 Nov 44
24th 250 beds	1 Feb 43 USAFIME	Palestine: Tel Litwinsky	None in USAFIME	To CBI 22 Jan 44
25th 250/75/50 beds	27 Aug 42 USAFIL	Liberia: Roberts Field	None in USAFIL	Inactivated 15 Feb 46

STATION HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
29th 250 beds	21 Dec 42 MTO	Algeria: Algiers	Credit belongs to successor unit	Reorganized and redesignated 170th Evacuation Hospital 5 Nov 44
30th 250 beds	16 Dec 42 PGC	Iran: Tehran	None in PGC	To CBI 14 Nov 43
32d 500 beds	26 Jan 43 MTO	Algeria: Tlemcen Italy: Caserta	Naples-Foggia Rome-Arno	To ZI 22 Sep 45
34th 250/100 beds	11 May 43 MTO	Pantelleria Island Sicily: Palermo Italy: Dugenta, Caiazzo, Rome	Sicily Rome-Arno	Inactivated 9 Oct 47
35th 500 beds	21 Feb 43 MTO	Algeria: Saint-Arnaud Tunisia: Morhrane, Mateur Corsica: Cervione France: Chalon-sur-Saône	Rome-Arno	To ETO 20 Nov 44
40th 500 beds	26 Dec 42 MTO	Algeria: Arzew, Mostaganem Corsica: Ajaccio, Ghisonaccia, Bigulia Italy: Rome	Rome-Arno	To ZI 24 Sep 45
43d 250 beds	11 May 43 MTO	Tunisia: Bizerte Italy: Caserta	Naples-Foggia Rome-Arno	Inactivated 5 Jun 44; personnel and equipment absorbed by 36th General Hospital
49th 500 beds	31 Aug 42 IBC	Iceland: Akureyri	None in IBC	To ETO 9 Jul 43
50th 250 beds	29 Apr 43 MTO	French Morocco: Casablanca Italy: Castagneto, Grosseto, Empoli	Rome-Arno	Reorganized and redesignated 99th Field Hospital 20 Mar 45

STATION HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
51st 250/500 beds	24 Dec 42 MTO	French Morocco: Rabat Algeria: Assi Bou Nif Italy: Naples France: Auxonne	Rome-Arno	To ETO 20 Nov 44
52d 250/500 beds	26 Dec 42 MTO	French Morocco: Oujda Italy: Naples	Naples-Foggia Rome-Arno	To ZI 8 Jul 45
53d 250/50 beds	11 May 43 MTO	Tunisia: Bizerte Italy: Naples Algeria: Oran	Naples-Foggia Rome-Arno	Inactivated 5 Jun 44, personnel and equipment absorbed by 23d General Hospital Reactivated in AMET as 50-bed unit 16 Aug 45 Inactivated 10 Dec 45
54th 250 beds	11 May 43 MTO	Tunisia: Tunis Algeria: Oran	Credit belongs to successor unit	Reorganized and redesignated 171st Evacuation Hospital 20 Mar 45
55th 250/100 beds	11 May 43 MTO	Tunisia: Kairouan Italy: Foggia, Leghorn, Florence, Pisa	Naples-Foggia Rome-Arno North Apennines	Inactivated 22 Apr 47
56th 250/350/300 beds	24 Apr 43 MTO	French Morocco: Casablanca Egypt: Heliopolis	None in MTO or AMET	To AMET 1 Mar 45 Inactivated 15 Mar 46 but did not actually close until May
57th 250/150 beds	19 Mar 43 MTO	Algeria: Oued Seguin Tunisia: Bizerte, Tunis	None in MTO or AMET	To AMET 1 Mar 45 Redesignated 247th Medical Detachment 25 Nov 45 and inactivated 28 Feb 46
58th 250 beds	11 May 43 MTO	Tunisia: Tunis Italy: Caserta	Naples-Foggia Rome-Arno	Inactivated 5 Jun 44; personnel and equipment absorbed by 21st General Hospital

STATION HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
60th 250/500 beds	11 May 43 MTO	Tunisia: Tunis Sardinia: Cagliari Corsica: Bigulia Italy: Senigallia	Rome-Arno	To SWPA 21 Aug 45; diverted at sea to ZI
61st 500 beds	25 Dec 42 MTO	Algeria: El Guerrah Italy: Foggia, Leghorn	Naples-Foggia Rome-Arno	Inactivated 15 Nov 47
64th 250 beds	8 Dec 42 MTO	Algeria: Sidi Bel Abbes	None in MTO	Inactivated 12 Jun 44
66th 250 beds	24 Apr 43 MTO	French Morocco: Casablanca Italy: Dugenta	Naples-Foggia Rome-Arno	Inactivated 5 Jun 44; personnel and equipment absorbed by 300th General Hospital
67th 250/200/100 beds	11 Dec 42 USAFICA	Gold Coast: Accra	None in USAFICA	Inactivated 31 Jul 45
69th 500 beds	19 Apr 43 MTO	Algeria: Assi Bou Nif France: Marseille	None in MTO	To ETO 20 Nov 44
70th 500 beds	2 Sep 43 MTO	Italy: Naples France: Marseille	Naples-Foggia Rome-Arno	To ETO Nov 44
72d 50 beds	31 Aug 42 IBC	Iceland: Kaldadharnes	None in IBC	Combined with 11th Station Hospital and redesignated 366th Station Hospital 6 Dec 43
73d 500 beds	20 Mar 43 MTO	Algeria: Constantine Italy: Caserta, Rome	Tunisia Rome-Arno	To ZI 27 Jul 45
74th 500 beds	2 Jun 43 MTO	Tunisia: Mateur Italy: Caiazzo, Bologna	Naples-Foggia Rome-Arno North Apennines Po Valley	To SWPA 11 Aug 45; diverted at sea to ZI
78th 500 beds	12 May 43 MTO	Tunisia: Bizerte Italy: Caserta France: San Raphaël	Rome-Arno Southern France	To ETO 20 Nov 44

STATION HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
79th 500 beds	12 May 43 MTO	Algeria: Algiers	None in MTO	Inactivated 24 Aug 44
80th 500 beds	11 May 43 MTO	Tunisia: Bizerte France: Marseille	Southern France	To ETO 20 Nov 44
81st 500 beds	11 May 43 MTO	Tunisia: Bizerte Italy: Naples, Leghorn	Rome-Arno North Apennines	To SWPA 13 Aug 45; diverted at sea to ZI
92d 75/150/250 beds	31 Aug 42 IBC	Iceland: Reykjaskoli, Keflavík	None in IBC	Inactivated 1 Jan 46
93d 150/75/50 beds	13 Jan 43 USAFICA	French West Africa: Dakar Tripolitania: Tripoli	None in USAFICA or AMET	Inactivated 28 Oct 45
103d 500 beds	2 Jun 43 MTO	Tunisia: Mateur Italy: Naples, Florence, Pisa	Naples-Foggia Rome-Arno North Apennines	To SW Pacific 15 Aug 45; diverted at sea to ZI
104th 100/25 beds	26 Jan 43 USAFIME	Eritrea: Massaua, Gura, Asmara Anglo-Egyptian Sudan: Khartoum	None in USAFIME	Disbanded 31 Jul 45
105th 500 beds	12 May 43 MTO	Algeria: Aïn Mokra Tunisia: Ferryville Italy: Civitavecchia, Grosseto, Pisa	Rome-Arno North Apennines	To SWPA 17 Aug 45; diverted at sea to ZI
106th 500 beds	2 Sep 43 MTO	Italy: Naples	Naples-Foggia Rome-Arno	To SWPA 29 Jun 45
113th 750 beds	11 May 43 PGC	Iran: Ahwaz	None in PGC	Redesignated 113th General Hospital 7 Sep 43
114th 500 beds	2 Jun 43 MTO	Tunisia: Ferryville Italy: Rome, Leghorn	Rome-Arno North Apennines	To ZI 20 Jul 45

STATION HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
118th 500 beds	2 Sep 43 MTO	Italy: Naples	Naples-Foggia Rome-Arno	To SWPA 29 Jun 45
131st 100 beds	18 Feb 43 USAFCC	Manitoba: The Pas	None in USAFCC	To ZI 6 Jan 44
133d 50/25 beds	Apr 43 USAFEC (detachment)	Quebec: Fort Chimo	None in USAFEC	To ZI 18 Jul 44
134th 50/25 beds	Apr 43 (detachment) USAFEC	Baffin Island: Frobisher Bay	None in USAFEC	To ZI 17 Jul 44
151st 250 beds	21 Nov 42 MTO	Algeria: La Sénia	None in MTO	Inactivated 5 Jun 44; personnel and equipment absorbed by 12th General Hospital
154th 150 beds	8 Jan 43 PGC	Iran: Ahwaz, Hamadan Sicily: Palermo Italy: Battipaglia, Civitavecchia, Caiazzo	Rome-Arno	To MTO 2 Apr 44 Inactivated 1 Oct 45
167th 250 beds	15 Sep 41 IBC	Iceland: Reykjavík, Alafoss	None in IBC	Combined with 14th Station Hospital and 15th Station Hospital and redesignated 365th Station Hospital 6 Dec 43
168th 250/500 beds	16 Sep 41 IBC	Iceland: Reykjavík	None in IBC	To ETO 3 Aug 43
175th 150/100/50 beds	30 Mar 42 USAFSA	Ascension Island	None in USAFSA	Inactivated 30 Sep 45
180th 250 beds	29 Nov 42 MTO	Algeria: Ste. Barbe-du-Tlélat, Boisseville Corsica: Calvi France: Dijon	Rome-Arno Southern France	To ETO 20 Nov 44

STATION HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
182d 500 beds	2 Sep 43 MTO	Italy: Naples, Montecatini	Naples-Foggia Rome-Arno	To SWPA 16 Aug 45; diverted at sea to ZI
188th 250/200/100/75 beds	3 Sep 42 GBC (Activated in place; was provisional unit established Aug 41)	Greenland: Narsarssuak	None in GBC	Inactivated 31 Dec 45
189th 25 beds	3 Sep 42 GBC (Activated in place; was provisional unit established Jun 42)	Greenland: Ivigtut	None in GBC	Inactivated 11 Dec 44
190th 200/50/25 beds	3 Sep 42 GBC (Activated in place; was provisional unit established Nov 41)	Greenland: Søndre Strømfjord	None in GBC	Inactivated 30 Sep 45
191st 150/50/25 beds	3 Sep 42 GBC (Activated in place; was provisional unit established Dec 41)	Greenland: Angmagssalik	None in GBC	Disbanded 10 Jul 45
192d 75 beds	22 Oct 42 IBC	Iceland: Reykjavík, Høfn	None in IBC	Inactivated 24 Jun 43; personnel and equipment absorbed by 92d Station Hospital
193d 25/50 beds	23 Jan 43 USAFSA	Brazil: Belém	None in USAFSA	Inactivated 30 Sep 45

STATION HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
194th 50/150/100 beds	23 Jan 43 USAFSA	Brazil: Natal	None in USAFSA	Inactivated 5 Oct 45
200th 150/100 beds	23 Jan 43 USAFSA	Brazil: Recife	None in USAFSA	Inactivated 12 Oct 45
221st 250/150/100 beds	1 Dec 42 BBC (Designated in place; was unnumbered unit arrived with troops 18 Apr 41)	Bermuda: Hamilton Parish, Fort Bell	None in BBC	Inactivated 1 Jan 46
225th 500 beds	2 Sep 42 MTO	Italy: Naples, Fano, Florence	Naples-Foggia Rome-Arno	To SWPA 16 Aug 45; diverted at sea to ZI
255th 200 beds	1 Jan 43 CDC (Activated in place)	Trinidad: Port-of-Spain	None in CDC	Disbanded 1 May 44
256th 50 beds	31 Jan 43 PGC (Designated in place; was provisional unit, established 6 Jun 42)	Iran: Ahwaz, Abadan, Kazvin, Arak	None in PGC	Inactivated 10 Dec 45
262d 500 beds	2 Sep 43 MTO	Italy: Aversa	Naples-Foggia Rome-Arno	To SW Pacific 22 Jul 45
292d 50/75/25 beds	10 Jun 43 CDC (Designated in place; was engineer hospital, established 1 Jan 42)	Jamaica: Fort Simonds	None in CDC	Inactivated 15 Jan 47

STATION HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
293d 50/75/25 beds	16 Jun 43 CDC (Designated in place; was unnumbered post hospital)	Antigua: Fort Byham–Coolidge Field	None in CDC	Disbanded 1 Nov 44
294th 25 beds	16 Jun 43 CDC (Designated in place; was unnumbered post hospital from 24 Aug 42)	Virgin Islands: St. Thomas	None in CDC	Disbanded 1 Apr. 44
295th 150 beds	16 Jun 43 CDC (Designated in place; was unnumbered post hospital from 15 Apr 42)	Puerto Rico: Henry Barracks	None in CDC	Disbanded 1 Apr 44
296th 50/100 beds	10 Jun 43 CDC (Designated in place; was unnumbered post hospital from Jul 41)	Puerto Rico: Camp Tortuguero	None in CDC	Inactivated 3 Jun 46
297th 150/75 beds	10 Jun 43 CDC (Designated in place; was medical detachment, activated 1 Oct 39)	Puerto Rico: Fort Buchanan	None in CDC	Disbanded 1 May 44
298th 600 beds	10 Jun 43 CDC (Designated in place; was post hospital Fort Brooke)	Puerto Rico: San Juan	None in CDC	Redesignated 161st General Hospital 1 Jun 44

STATION HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
299th 150/25 beds	10 Jun 43 CDC (Activated in place)	Cuba: San Julián	None in CDC	Redesignated 299th Medical Dispensary 3 Jun 46
300th 25 beds	10 Jun 43 CDC	Cuba: Batista Field	None in CDC	Inactivated 1 Feb 47
301st 75/100/25 beds	15 Sep 43 CDC (Designated in place; was unnumbered Station Hospital activated Apr 41)	Puerto Rico: Ponce (Losey Field), San Juan	None in CDC	Attached to 296th Station Hospital, San Juan, 15 Sep 43; returned to Losey Field Jun 44
308th 250/150/25 beds	1 Apr 43 NBC (Designated in place; was post hospital activated on shipboard Jan 41)	Newfoundland: St. John's (Fort Pepperrell)	None in NBC	Inactivated 1 Jan 46
309th 100/75 beds	1 Apr 43 NBC (Designated in place; was post hospital activated May 42)	Newfoundland: Argentia (Fort McAndrew)	None in NBC	Disbanded 8 Sep 45
310th 150/75 beds	1 Apr 43 NBC (Designated in place; was post hospital activated May 41)	Newfoundland: Gander	None in NBC	To ZI 20 Jul 44
311th 25 beds	1 Apr 43 NBC (Designated in place; was post hospital activated Mar 42)	Newfoundland: Stephensville (Harmon Field)	None in NBC	To ZI 12 Jul 44

STATION HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
326th 250/100/50 beds	10 Jun 43 CDC (Designated in place; was post hospital activated in 42)	Puerto Rico: Gurabo (Camp O'Reilly)	None in CDC	Inactivated 27 Mar 50
327th 750 beds (See also 208th General Hospital)	2 Jul 43 IBC (Redesignated in place; was 208th General Hospital)	Iceland: Helgafell	None in IBC	To ETO 30 Oct 43
330th SH 200/150/75/250 beds	20 Nov 43 CDC (Designated in place; was post hospital established May 41)	Puerto Rico: Borinquen Field	None in CDC	Inactivated 31 Mar 49
333d 700 beds (See also 218th General Hospital)	1 Apr 43 CDC (Redesignated in place; was 218th General Hospital)	Canal Zone: Fort Clayton	None in CDC	Redesignated 262d General Hospital 1 Apr 44
352d 25 beds	25 Nov 43 CDC (Designated in place; was unnumbered unit established Dec 42)	Surinam: Zanderij Field	None in CDC	Inactivated 3 Jun 46
353d 75/25 beds	25 Nov 43 CDC (Designated in place; was post hospital established Nov 41)	British Guiana: Atkinson Field	None in CDC	Inactivated 15 Jan 47

STATION HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
354th 50/25 beds	24 Nov 43 CDC (Designated in place; was post hospital)	Surinam: Paramaribo	None in CDC	Disbanded 1 Nov 44
355th 150/50/25 beds	25 Nov 43 CDC (Designated in place; was post hospital)	St. Lucia: Vieux Fort	None in CDC	Disbanded 1 Nov 44
356th 75/50/25 beds	25 Nov 43 CDC (Designated in place; was unnumbered post hospital)	Curaçao: Camp Suffisant	None in CDC	Disbanded 22 Aug 45
358th 75/50/25 beds	25 Nov 43 CDC (Designated in place; was unnumbered post hospital)	Aruba: Camp Savaneta	None in CDC	Disbanded 22 Aug 45
359th 600/250/150/250 beds (See also 41st General Hospital)	25 Nov 43 CDC (Redesignated in place; was 41st General Hospital)	Trinidad: Fort Read	None in CDC	Inactivated 31 Mar 47
365th 500 beds (See also 14th, 15th, 167th Station Hospitals)	6 Dec 43 IBC (Redesignated in place; combines 14th, 15th, 167th Station Hospitals)	Iceland: Helgafell	None in IBC	To ETO 26 Jun 44
366th 150 beds (See also 11th, 72d Station Hospitals)	6 Dec 43 IBC (Redesignated in place; combines 11th, 72d Station Hospitals)	Iceland: Reykjavík	None in IBC	Disbanded 23 Mar 45

STATION HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
367th 50 beds	10 Jan 44 USAFIME (Activated in place using surplus personnel of 104th Station Hospital)	Anglo-Egyptian Sudan: Khartoum French West Africa: Dakar	None in USAFIME and AMET	Redesignated 338th Medical detachment 1 Jan 46
368th 450/300/500 beds (See also 210th General Hospital)	1 Apr 44 CDC (Redesignated in place; was 210th General Hospital)	Canal Zone: Fort Gulick	None in CDC	Inactivated 22 Nov 48
370th 25 beds	27 Jul 44 MTO (Designated in place; was provisional station hospital established 25 Mar 43)	French Morocco: Marrakech	None in MTO and AMET	To AMET 1 Mar 45 Inactivated 25 Oct 45
384th 300 beds (See also 38th General Hospital)	1 Jan 46 AMET (Redesignated in place; was 38th General Hospital)	French Morocco: Casablanca	None in AMET	Inactivated 10 Mar 46
391st 400 beds	11 May 46 MTO (Activated in place)	Italy: Udine	None in MTO	Inactivated 15 Oct 47
392d 200 beds	1 Jun 46 MTO (Activated in place)	Italy: Naples	None in MTO	Inactivated 15 Jan 47

FIELD HOSPITALS

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
4th 400 beds	11 Nov 42 USAFIME	Palestine Libya Tunisia Sicily Italy: Naples, Manduria, Lecce, Termoli, San Severo, Lavello, Cerignola	Egypt-Libya (1st Platoon) Tunisia (2d Platoon) Sicily Naples-Foggia Rome-Arno	To MTO 2 Nov 43 Inactivated 10 Sep 45
10th 400 beds	19 Mar 43 MTO	Tunisia Sicily Italy: Caserta to Anzio France: the Riviera to the Moselle	Tunisia Sicily Naples-Foggia Rome-Arno Southern France	To ETO 1 Nov 44
11th 400 beds	27 May 43 MTO	Sicily Italy: the Volturno to Anzio France: the Riviera to the Moselle	Sicily Naples-Foggia Rome-Arno Southern France	To ETO 1 Nov 44
15th 400 beds	29 Mar 43 USAFIME	Egypt Libya Anglo-Egyptian Sudan Sardinia Corsica Italy: the Arno to the Alps	Naples-Foggia Rome-Arno North Apennines Po Valley	To MTO 12 Oct 43 Inactivated 13 May 46
16th 400 beds	29 Mar 43 USAFIME	Egypt Anglo-Egyptian Sudan	None in USAFIME	To ETO 17 Mar 44
18th 400 beds	4 Jan 43 PGC	Iran: Sultanabad, Bandar Shahpur, Ahwaz	None in PGC	To CBI 1 Aug 44
19th 400 beds	14 Jan 43 PGC	Iran: Andimeshk, Bandar Shahpur, Abadan	None in PGC	Inactivated 31 Jul 45 (1st, 2d platoons), 8 Sep 45 (3d platoon)

FIELD HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
26th 400 beds	22 Feb 43 PGC	Iran: Kazvin, Khorramabad, Hamadan	None in PGC	To ETO 18 Feb 45
32d 400 beds	2 Sep 43 MTO	Italy: Salerno to the Alps	Naples-Foggia Rome-Arno North Apennines Po Valley	To SWPA 17 Jul 45
33d 400 beds	2 Sep 43 MTO	Italy: Caserta to the Alps	Naples-Foggia Anzio Rome-Arno North Apennines Po Valley	Inactivated 25 Sep 45
34th 400 beds	4 Sep 43 MTO	Italy: Cerignola, Spinazzola	Naples-Foggia Rome-Arno	To SWPA 22 Jul 45
35th 400 beds	4 Sep 43 MTO	Italy: Erchie, San Cesario, Senigallia, Rimini, Lecce, Sparanise, Caserta	Naples-Foggia Rome-Arno North Apennines	Inactivated 25 Oct 45
99th 400 beds (See also 50th Station Hospital)	20 Mar 45 MTO (Redesignated in place; was 50th Station Hospital)	Italy: Grosseto, Castagneto, Empoli, Pisa	None in MTO	Inactivated 1 May 46

SURGICAL HOSPITAL

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
48th 400 beds (See also 128th Evacuation Hospital)	9 Nov 42 MTO	Algeria Tunisia	Algeria–French Morocco Tunisia	Reorganized and redesignated 128th Evacuation Hospital 1 May 43

EVACUATION HOSPITALS

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
8th 750 beds	18 Nov 42 MTO	French Morocco: Casablanca Italy: Salerno to the Alps	Naples-Foggia Rome-Arno North Apennines Po Valley	Inactivated 30 Sep 45
9th 750 beds	21 Nov 42 MTO	Algeria: Oran, Tébessa Tunisia: Tabarka, Mateur, Ferryville Sicily: Termini Italy: Naples France: the Riviera to the Moselle	Tunisia Naples-Foggia Rome-Arno Southern France	To ETO 1 Nov 44
11th 400 beds	18 Nov 42 MTO	French Morocco: Rabat Tunisia: Tabarka to Bizerte Sicily: Licata to Sant'Agata; Cefalù, Palermo Italy: Volturno to Rome France: the Riviera to the Moselle	Tunisia Sicily Naples-Foggia Rome-Arno Anzio Southern France	To ETO 1 Nov 44
15th 400 beds	21 Feb 43 MTO	Tunisia Sicily: Caltanissetta to Nicosia; Licata Italy: Volturno to the Alps	Tunisia Sicily Naples-Foggia Anzio Rome-Arno North Apennines Po Valley	Inactivated 8 Sep 45
16th 750 beds	6 May 43 MTO	Algeria: Ste. Barbe-du-Tlélat Italy: Salerno to the Alps	Naples-Foggia Rome-Arno North Apennines Po Valley	Inactivated 31 Oct 45
27th 750 beds	20 Apr 44 MTO	Italy: Maddaloni France: the Riviera to the Moselle	Rome-Arno Southern France	To ETO 1 Nov 44

EVACUATION HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
38th 750 beds	9 Nov 42 MTO	Algeria: St. Cloud, Télergma Tunisia: Bédja, Tunis Italy: Salerno to the Alps	Algeria–French Morocco Tunisia Naples-Foggia Anzio Rome-Arno North Apennines Po Valley	Inactivated 8 Sep 45
51st 750 beds	19 Apr 44 MTO	Italy: Caserta France: the Riviera to the Moselle	Rome-Arno Southern France	To ETO 1 Nov 44
56th 750 beds	24 Apr 43 MTO	Tunisia: Bizerte Italy: Salerno to the Alps	Naples-Foggia Anzio Rome-Arno North Apennines Po Valley	To ZI 3 Oct 45
59th 750 beds	24 Dec 42 MTO	French Morocco: Casablanca Sicily: Palermo Italy: Anzio, Battipaglia France: the Riviera to the Moselle	Sicily Rome-Arno Southern France	To ETO 1 Nov 44
77th 750 beds	11 Nov 43 MTO	Algeria: Oran, Tébessa, Morris Sicily: Licata	Algeria–French Morocco Tunisia Sicily	To ETO 10 Nov 43
91st 400 beds	24 Dec 42 MTO	French Morocco: Port-Lyautey Algeria: Mostaganem Sicily: Palermo	Sicily	To ETO 8 Nov 43
93d 400 beds	24 Apr 43 MTO	Sicily: Gela to San Stefano Italy: Salerno to Rome France: the Riviera to the Moselle	Sicily Naples-Foggia Rome-Arno Anzio Southern France	To ETO 1 Nov 44

EVACUATION HOSPITALS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
94th 400 beds	11 May 43 MTO	Algeria: Perrégaux Italy: Salerno to the Alps	Naples-Foggia Rome-Arno Anzio North Apennines Po Valley	To SWPA 13 Aug 45; diverted at sea to ZI
95th 400 beds	24 Apr 43 MTO	French Morocco: Oujda Algeria: Aïn-et-Turk Italy: Salerno to Montalto France: the Riviera to the Moselle	Naples-Foggia Anzio Rome-Arno Southern France	To ETO 1 Nov 44
128th 400 beds (See also 48th Surgical Hospital)	1 May 43 MTO (Redesignated in place; was 48th Surgical Hospital)	Tunisia Sicily: Cefalù to San Stefano; Castellammare, Alcamo	Tunisia Sicily	To ETO 7 Nov 43
170th 400 beds (See also 29th Station Hospital)	5 Dec 44 MTO (Redesignated in place; was 29th Station Hospital)	Italy: the Arno to the Alps	North Apennines Po Valley	To SW Pacific 25 Jul 45
171st 400 beds (See also 54th Station Hospital)	20 Mar 45 MTO (Redesignated in place; was 54th Station Hospital)	Italy: the Arno to the Alps	North Apennines Po Valley	To ZI 14 Jul 45

CONVALESCENT HOSPITALS

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
2d 3000 beds	27 Jan 43 MTO	Algeria: Bouisseville Italy: Naples France: Besançon	Rome-Arno Southern France	To ETO 1 Nov 44
3d 3000 beds	2 Sep 43 MTO	Italy: Naples to the Alps	Naples-Foggia Rome-Arno North Apennines Po Valley	Inactivated 8 Sep 45

MEDICAL REGIMENT

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
16th	21 Nov 42 (1st Battalion) 25 Dec 42 (2d Battalion) MTO	Algeria Tunisia	Tunisia	Disbanded 8 Sep 43; personnel and equipment to 161st, 162d Medical Battalions

MEDICAL BATTALIONS

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
1st (1st Division)	8 Nov 42 MTO	Algeria Tunisia Sicily	Algeria–French Morocco Tunisia Sicily	To ETO 20 Oct 43
3d (3d Division)	8 Nov 42 MTO	French Morocco Tunisia Sicily Italy: Salerno to Rome France: the Riviera to the Moselle	Algeria-French Morocco Sicily Tunisia Naples-Foggia Anzio Rome-Arno Southern France	To ETO 1 Nov 44
5th (5th Division)	11 May 42 IBC	Iceland	None in IBC	To ETO 5 Aug 43
9th (9th Division)	8 Nov 42 MTO	French Morocco Algeria Tunisia Sicily	Algeria–French Morocco Tunisia Sicily	To ETO 10 Nov 43
10th Mountain (10th Mountain Division)	18 Jan 45 MTO	Italy: the Arno to the Alps	North Apennines Po Valley	To ZI 29 Jul 45
26th (Separate)	2 Mar 42 CDC (Activated in place)	Puerto Rico: Fort Buchanan	None in CDC	Inactivated 1 Sep 43 Disbanded 11 Nov 44

MEDICAL BATTALIONS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
47th Armored (1st Armored Division)	8 Nov 42 MTO	Algeria Tunisia Italy: Salerno to the Alps	Algeria–French Morocco Tunisia Naples-Foggia Anzio Rome-Arno North Apennines Po Valley	To USFET 25 Jul 45
48th Armored (2d Armored Division)	25 Dec 42 MTO	French Morocco Sicily	Sicily	To ETO 12 Nov 43
51st (Separate)	11 Nov 42 MTO	Algeria Tunisia Sicily Italy: Naples, Leghorn	Algeria–French Morocco Tunisia Sicily Naples-Foggia Rome-Arno	Inactivated 30 Sep 45
52d (Separate)	27 Apr 43 MTO	French Morocco: Casablanca, Rabat Italy: Salerno to Rome France: the Riviera to the Moselle	Naples-Foggia Anzio Rome-Arno Southern France	To ETO 1 Nov 44
54th (Separate)	24 Apr 43 MTO	Sicily Italy: Salerno to the Alps	Sicily Naples-Foggia Rome-Arno North Apennines Po Valley	Inactivated 8 Sep 45
56th (Separate)	8 Nov 42 MTO	French Morocco Algeria: Mostaganem Tunisia: Ferryville Sicily: Licata to Palermo Italy: the Garigliano to Rome France: the Riviera to the Moselle	Sicily Rome-Arno Southern France	To ETO 1 Nov 44

MEDICAL BATTALIONS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
58th (Separate)	7 May 43 MTO	Algeria: Oran Italy: Paestum France: Ste. Maxime, St. Raphaël	Rome-Arno Southern France	To ETO 20 Nov 44
109th (34th Division)	8 Nov 42 MTO	Algeria Tunisia Italy: Salerno to the Alps	Algeria–French Morocco (Company C only) Tunisia Naples-Foggia Anzio Rome-Arno North Apennines Po Valley	To ZI 22 Oct 45
111th (36th Division)	13 Apr 43 MTO	Italy: Salerno to Grosseto France: the Riviera to the Moselle	Naples-Foggia Anzio Rome-Arno Southern France	To ETO 1 Nov 44
120th (45th Division)	22 Jun 43 MTO	Sicily Italy: Salerno to Rome France: the Riviera to the Moselle	Sicily Naples-Foggia Rome-Arno Southern France	To ETO 1 Nov 44
161st (Separate) (See also 16th Medical Regiment)	8 Sep 43 MTO (Activated in place; was 1st Battalion 16th Medical Regiment)	Italy: Salerno to the Arno	Naples-Foggia Rome-Arno North Apennines Po Valley	To ZI 7 Aug 45
162d (Separate) (See also 16th Medical Regiment)	25 Aug 43 MTO (Activated in place; was 2d Battalion 16th Medical Regiment)	Italy: Salerno to the Arno	Naples-Foggia Rome-Arno Anzio (1st Platoon 602d Clearing Company) North Apennines Po Valley	To ZI 28 Aug 45

MEDICAL BATTALIONS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
163d (Separate)	30 Apr 44 MTO	Italy: the Garigliano to the Alps	Rome-Arno North Apennines Po Valley	To ZI 31 Jul 45
164th (Separate)	30 Apr 44 MTO	Italy: Naples France: Marseille, Dijon	Rome-Arno Southern France	To ETO 20 Nov 44
181st (Separate)	18 May 44 MTO	Italy: Caserta France: Ste. Maxime, Lons-le-Saunier	Rome-Arno Southern France	To ETO 20 Nov 44
261st (Amphibious)	11 Jan 43 MTO	Sicily: Gela Italy: Caserta	Sicily Naples-Foggia	To ETO 19 Nov 43
307th Airborne Medical Company (82d Airborne Division)	10 May 43 MTO	Sicily Italy: Naples	Sicily Naples-Foggia	To ETO 1 Dec 43
310th (85th Division)	2 Jan 44 MTO	Italy: the Garigliano to the Alps	Rome-Arno North Apennines Po Valley	To ZI 17 Aug 45
313th (88th Division)	25 Dec 43 MTO	Italy: the Garigliano to the Alps	Rome-Arno North Apennines Po Valley	Inactivated 15 May 47
316th (91st Division)	30 Apr 44 MTO	Italy: Rome to the Alps	Rome-Arno North Apennines Po Valley	To ZI 25 Aug 45
317th (92d Division)	16 Oct 44 MTO	Italy: the Arno to the Alps	Rome-Arno North Apennines Po Valley	To ZI 6 Nov 45

AUXILIARY SURGICAL GROUPS

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
2d	11 Nov 42 (detachment) MTO	Algeria French Morocco Tunisia Sicily Italy: Salerno to the Alps France: the Riviera to the Moselle	Algeria–French Morocco Tunisia Sicily Naples-Foggia Rome-Arno Anzio North Apennines Southern France Po Valley	Inactivated 14 Sep 45
3d	16 Feb 43 (detachment) MTO	Algeria Tunisia Sicily	Tunisia Sicily	To ETO 11 Nov 43

MEDICAL GENERAL LABORATORY

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
15th	2 Sep 43 MTO	Italy: Naples	Naples-Foggia Rome-Arno	Inactivated 25 Oct 45

MEDICAL SUPPLY UNITS

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
2d Medical Supply Depot, (See 231st Medical Composite Battalion)	8 Dec 42 MTO	Algeria	None in MTO	Disbanded 13 Aug 44
4th Medical Supply Depot (See 232d Medical Composite Battalion)	26 Jan 43 MTO	Algeria Tunisia Italy: Salerno, Bari, Naples, Civitavecchia, Piombino	Naples-Foggia Rome-Arno	Inactivated 15 Aug 44
4th Medical Supply Depot, Section 1, Advance Depot Platoon	31 Oct 42 USAFIME	Egypt: Heliopolis	None in USAFIME	Rejoined parent unit above, early 1943

MEDICAL SUPPLY UNITS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
7th Medical Supply Depot	24 Apr 43 MTO	Algeria Tunisia Corsica Italy France: the Riviera to the Moselle	Rome-Arno Southern France	To ETO 1 Nov 44
7th Medical Supply Depot, Section 2, Advance Depot Platoon (See also 22d Medical Supply Depot)	14 Jan 43 PGC	Iraq: Basra	None in PGC	Redesignated 1st Section, Advance Depot Platoon, 22d Medical Depot Company, 1 Nov 43
12th Medical Supply Depot	2 Sep 43 MTO	Italy: Avellino to Udine	Naples-Foggia Anzio Rome-Arno North Apennines Po Valley	Inactivated 27 Oct 45
20th Medical Depot Company	3 Aug 43 IBC (Activated in place)	Iceland	None in IBC	Inactivated 17 Dec 43
22d Medical Depot Company (See also 7th Medical Supply Depot, Section 2, Advance Depot Platoon)	1 Nov 43 PGC (Redesignated in place; was Section 2, Advance Depot Platoon, 7th Medical Supply Depot)	Iraq: Basra	None in PGC	Disbanded 25 Jul 45
57th Medical Base Depot Company	30 Jun 46 MTO	Italy: Leghorn	None in MTO	Inactivated 8 Nov 47
60th Medical Base Depot Company	3 Aug 44 MTO	Algeria: Oran Italy: Naples, Leghorn	Rome-Arno	Inactivated 12 May 46

MEDICAL SUPPLY UNITS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
70th Medical Base Depot Company (See also 2d Medical Depot Company, 231st Medical Composite Battalion)	13 Aug 44 MTO (Activated in place from personnel of 2d Medical Depot Company)	France: Marseille, Dijon	None in MTO	To ETO 20 Nov 44
71st Medical Depot Company (See also 2d Medical Depot Company; 231st Medical Composite Battalion)	13 Aug 44 MTO (Activated in place from personnel of 2d Medical Depot Company)	France: Ste. Maxime, Marseille, Dijon	None in MTO	To ETO 20 Nov 44
72d Medical Base Depot Company (See also 4th Medical Depot Company; 232d Medical Composite Battalion)	15 Aug 44 MTO (Activated in place from personnel of 4th Medical Depot Company)	Italy: Naples	None in MTO	To SWPA 22 Jul 45
73d Medical Base Depot Company (See also 4th Medical Depot Company; 232d Medical Composite Battalion)	15 Aug 44 MTO (Activated in place from personnel of 4th Medical Depot Company)	Italy: Piombino, Leghorn	Rome-Arno North Apennines	Inactivated 29 Jun 46
80th Medical Base Depot Company	4 Dec 44 MTO	Italy: Leghorn, Senigallia, Bari	Rome-Arno	To SWPA 22 Jul 45

MEDICAL SUPPLY UNITS—*Continued*

Unit	Arrived in Theater	Where Served	Campaign Credits	Disposition and Date
231st Medical Composite Battalion (See also 2d Medical Depot Company)	13 Aug 44 MTO (Activated in place from personnel of 2d Medical Depot Company)	France: Marseille, Dijon	None in MTO	To ETO 20 Nov 44
232d Medical Composite Battalion (See also 4th Medical Depot Company)	15 Aug 44 MTO (Activated in place from personnel of 4th Medical Depot Company)	Italy: Naples, Leghorn	Rome-Arno	Inactivated 12 May 46

Appendix C

OBSERVATIONS ON HOSPITALIZATION AND EVACUATION SYSTEM, FRENCH EXPEDITIONARY CORPS, ASSIGNED FIFTH ARMY*

Each infantry battalion has one medical officer (Lt.) and one auxiliary (Medicin Auxiliare). The latter is usually a medical student. The medical officer remains at the aid station while the auxiliary supervises and assists aid men in care of wounded on the field.

The next link in the chain is the regimental aid station (Poste de Secours). This station is manned by a Captain, M.C., and a Dental Officer. The number of enlisted men is the same as in the corresponding U. S. detachment. Wounded and sick are sorted and treated. The minor cases of sick and wounded are retained, the serious ones are evacuated via the collecting company to the division clearing station.

At the clearing station, patients are treated and sorted in much the same way as in our Army. Beside the station is located the Formation Chirurgicale Mobile. This unit, with 20 beds, is organized to care for the non-transportables. Operating rooms are established in converted trucks. The transportable cases are evacuated from the clearing station to the evacuation or field hospital. The latter two units perform the same functions and are used interchangeably.

Surgical Group. This type unit consists of personnel grouped into surgical teams. Its functions are the same as those of the U. S. auxiliary surgical group. The surgical group differs from the surgical formation in that it has no bed capacity and no organic transportation.

Triage is effected between the clearing stations and evacuation and field hospitals under the supervision of the evacuation officer of the Corps d'Armee. This officer informs the clearing stations each morning as to the number of vacant beds in each mobile hospital in rear of the division. Bed credits are also established at each hospital for certain types of cases from each division, such as head, chest, abdomen, orthopedic, and ordinary sick. In this way all cases needing the care of specialists are guided to the hospitals where such specialists are available.

Patients are evacuated directly from the mobile hospitals of the corps to a fixed or convalescent hospital in the medical base at Naples.

All French hospitals in Italy are under control of one medical officer, *because they are in the same line of evacuation.* The next segment in the chain is between Italy and Africa and control is being assumed wholly by the U. S. Army. The Service de Sante, Hq. French Army, Algiers, assumes responsibility for patients on their arrival in Africa.

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*Reproduced from ETMD Rpt, Hq NATO, 1 Jun 44 (for May), pp. 6–7.

French Evacuation Officers desire that patients being evacuated to French base hospitals by air, train, or sea be classified as follows:

- Wounded.
    - Fractures (total litter and total ambulatory)
    - Eyes and Face
    - Others

- Disease
    - Tuberculosis
    - Mental
    - Others

- Prisoners of War

- Total Patients
    - Litter
    - Ambulatory

This system allows planning of transportation in advance and facilitates triage of patients from airfields, railroad stations, and ports directed to hospitals caring for each type of case.

Hygiene Sections. These organizations are normal components of the Army or independent Corps. They are primarily bath and disinfestation units and each is organized as follows: 1 Officer, 24 EM (must be attached for rations and quarters), 3 vehicles and 2 trailers with showers. Each unit can bathe 1000 men per day.

Reviving and Blood Transfusion Section. (Section de Transfusion et Reanimation). This organization handles the French blood bank in Italy and controls the distribution of blood and plasma to hospitals. In turn it is supported by the Centre de Transfusion du Sang which is located in Algiers. The training of all personnel in the treatment of shock and the technique of preparation and administration of blood and plasma is supervised by the Centre de Transfusion du Sang.

Ambulance Service. Corps ambulance evacuation is provided by Compagnie Sanitaire #531. This organization consists of 4 sections of 20 ambulances each. Two sections have male drivers, the other two, female drivers. Ambulance units are a component of the "Train" (Transportation). The personnel are non-medical. Repair and maintenance of vehicles are provided by auto repair companies (Compagnie de Reparation d'Autos) of the Corps or Army. From a functional standpoint, ambulance companies are under the jurisdiction of the Medical Department.

Laboratory. A laboratory is equipped with American material from T/E 8–610. The personnel consists of 14 officers and 35 EM. There are no vehicles. The functions are the same as those of the U. S. Medical Laboratory T/O 8–610.

Medical Supply. This unit is modeled after T/O 8–661 and functions in the same manner.

Appendix D

THE GERMAN MEDICAL ESTABLISHMENT*

1. INTRODUCTION

The first limitations imposed on any account purporting to assess the German medical establishment are time and place. That is to say, observers no matter how qualified cannot judge the standards of German medical practice in 1939, for instance, in the light of what they found to exist in May 1945, after the total enemy collapse; nor can they judge the quality of practice elsewhere in Europe in the light of what they found in Italy. Immediately following the Allied victory in Italy, the Fifth Army Surgeon directed several qualified officers to tour the German medical installations, and survey as completely as they could the techniques and facilities utilized by the German medical service. These officers were: Col Hugh R. Gilmore, Jr., MC, Chief of Preventive Medicine, Fifth Army; Col Howard E. Snyder, MC, Surgical Consultant, Fifth Army; Col Eldridge Campbell, MC, Acting Neurosurgical Consultant, MTOUSA; Lt Col Paul Sanger, MC, Chief of Surgical Service, 38th Evacuation Hospital; Lt Col Manuel E. Lichtenstein, MC, Chief of Surgical Service, 16th Evacuation Hospital; Lt Col Douglas Donald, MC, Medical Consultant, Fifth Army; Lt Col Marcel H. Mial, SnC, Medical Supply Officer, Fifth Army; and Captain Carroll H. Ward, MAC, Assistant Medical Supply Officer, Fifth Army. From their reports to the Army Surgeon, most of the material in this chapter is derived.

This, then, was the German medical establishment as it existed in Italy just after the German collapse. How it existed in, say, Russia in 1942, cannot be assumed from the material set down here. Nor can the various social, or political, or economic factors which doubtless affected all German medical practice, including the military, under National Socialism, be truly or fully evaluated. For while many of the German medical officers interviewed volunteered opinions concerning the effect of political or racial discrimination on sound medical practice in Germany, and those opinions will be set down here, it must be remembered that such opinions are hardly objective: after the German collapse all elements of the German army were busy negating their part in the Nazi regime, forswearing their allegiance to the Nazi party, and condemning such fanatical groups as the loyal party members, the Gestapo and the SS formations of the Wehrmacht. In other words, if saying "the German medical service was degraded by National

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*Reproduced from the Annual Rpt of the Surg, Fifth U.S. Army, MTO, 1945, pp. 191–209.

Socialism" would indicate that a German doctor was not a Nazi, he would not hesitate for a moment to say just that.

With these limitations in mind, it is safe to view the German medical establishment in Italy after the military defeat of May 1945, as seen through the eyes of qualified American observers.

2. *HOSPITALIZATION AND EVACUATION*

The chain of evacuation of German wounded was found to be very similar to that utilized by the US Army, but triage, that is sorting of patients for specialized hospitalization, differed in several important aspects. First aid to the wounded was rendered in a Verwundetennest by a medical non-commissioned officer, in an extreme forward position. This treatment can be said to compare in echelon to that given by a US company aid man on the field of battle. Here the first dressing, improvised splinting for transportation ease, traction splinting, pressure bandages and tourniquets were applied. The wounded were evacuated from the Verwundetennest to the Truppenverbandplatz, which corresponded to the American battalion aid station, and where the first medical officer, corresponding to the US battalion surgeon, practiced. Treatment given at this station included: checking of the dressing (unless there was some indication the dressing was not to be disturbed) ; tracheotomy; application of occlusive dressings to open chest wounds; relief of pain; preparation for further evacuation to the rear; shock therapy in the forms of peristone, physiological salt solution, coramine, and external heat by electric heaters; prevention of infection, by injection of tetanus antitoxin and gas gangrene antitoxin, administration of sulfapyridine by mouth, insufflation of sulfanilamide powder into wound at time of first dressing, pressure bandage, and arrest of hemorrhage by application of tourniquet (rarely by hemostat or ligature); and catheterization.

From the Truppenverbandplatz all the wounded were evacuated to the Hauptverbandplatz, which was established about four miles to the rear of the combat line by the Sanitaets Kompanie of the division. This unit was staffed to perform the functions of both clearing and hospitalization. Its Tables of Organization provided for two operating surgeons, but in times of stress six or eight more surgeons might be added. The unit was designed to hospitalize two hundred patients, but often expanded to three or four hundred. When the flow of casualties was not heavy, all those patients with abdominal wounds and other non-transportable cases were given primary surgery at this installation. In addition, primary surgery was perfomed on minor wound cases here as well. All cases with major compound fractures, brain wounds, and chest wounds were evacuated to the Feldlazarett or to a Kriegslazarett, where they were treated with more definitive care. In the German medical field manuals the functions of a Hauptverbandplatz are listed as: tracheotomy; closure of open chest wounds; aspiration of the pericardium in cardiac tamponade; emergency amputations; final arrest of hemorrhage; administration of blood and blood substitutes; surgery on the non-transportables; and suprapubic cystostomy.

The Feldlazarett was the next unit in the chain of evacuation. It was an Army unit designed to care for two hundred patients. Ordinarily patients with head wounds and transportable chest wounds, severe muscle wounds, buttock wounds, and major compound fractures received primary surgery in the Feldlazarett. While it was attempted to perform intra-abdominal surgery as far forward as possible, such cases were often evacuated to the Feldlazarett for surgery whenever the Hauptverbandplatz was too busy. The Feldlazarett was staffed with only two surgeons, but in periods of pressure, it was often augmented by surgeons from other units.

The Kriegslazarett, or General Hospital, was usually assigned to the German Army Group. In Italy most of these installations were grouped at Merano and Cortina d'Ampezzo. It was their function to hospitalize all patients who were not returned to duty from the more forward units. In addition, certain groups of the wounded received primary surgery at the Kriegslazarett, such as penetrating head wounds complicated by involvement of the eye or ear, and maxillofacial wounds. In very busy periods, all patients with major wounds might be evacuated to the Kriegslazarett for surgery while the more forward units confined their surgery to men with wounds of such a nature that they would be able to return to their units and full duty within reasonable short periods of time after surgery. Also, as frequently occurred during heavy attack periods, abdominal and head wound cases were given no surgical care.

In addition to those units already mentioned, there were hospitals for the lightly sick, lightly wounded, and convalescent patients. In each German division was the Ersatz company which served as a replacement depot and reconditioning unit for lightly wounded who had received primary surgery at the Hauptverbandplatz. The wounded sent to this Ersatz company were given light exercise under the direction of a doctor, and were ordinarily returned to duty after one week. There were usually between fifty and one hundred lightly wounded in the Ersatz company, in addition to the replacements sent from Germany, who only stayed long enough to be equipped before being sent into combat. The officers and the doctor of the Ersatz company were limited service personnel by nature of previous wounds or illness.

In the army areas and in the general hospital centers, hospitals for the lightly sick and wounded were established by elements of transport units (Krankentransportabteilungen). They received their patients from Feldlazaretten in the Army area and from Kriegslazaretten in the Army Group area or hospital centers. Most patients sent to these particular hospitals stayed for two or three weeks. One such hospital was located at Bolzano not far from the hospital center at Merano. At the time this hospital was visited on 6 May 1945 there were 1600 patients. The commanding officer reported that 500 would be able to return to duty in two weeks, 600 in one month, 300 in two months, 100 in three months and the remaining 100 in six months.

At the beginning of the war in Europe, all divisions had two Sanitaets Kompanies. At the end only the armored and mountain divisions had two each, but the Corps Surgeon had under his control one Sanitaets Kompanie for use where needed. When two Sanitaets Kompanies were available, two Hauptverbandplatzen were often established. In the beginning of an offensive, one Sanitaets Kompanie, horse-drawn, was placed only three or four kilometers behind the battle line to receive casualties. The other Kompanie, motorized, was held in reserve to be used after substantial gains had been made. Then, if further gains were made and the Hauptverbandplatz was required farther forward, the motorized Kompanie moved, leaving its patients to be taken over by the animal-drawn Kompanie. The patients of the animal-drawn Kompanie were left to be taken over by a Feldlazarett. Thus there were often two divisional units performing surgery ahead of the Army's most forward Feldlazarett. With a large-scale offensive division, army, and army group hospitals might all perform primary surgery only on the less seriously wounded, putting aside the intra-abdominal and intra-cranial wounds in favor of those who were more likely to live and return to full duty.

There were no Auxiliary Surgical Groups, but the German Army Surgeon learned to use personnel from reserve or less active units to augment the staffs of heavily-pressed units. Most American observers felt that the German system of hospitalization and evacuation was certainly extremely fexible, but its very flexibility tended to favor the lightly wounded at the expense, and often the expense of death, of the more seriously wounded, the group which US surgical practice terms "first priority" wounded.

3. *THE SURGICAL SERVICE*

Infection of wounds was found by one observer to be the most incomprehensible facet of the German surgical service. He subtitled his report to the Army Surgeon "The Story of a Finger", to illustrate the status of asepsis, antisepsis, wound contamination, and cross infection. In one hospital visited, the German surgeon made "rounds" looking at patients, examining clinical records and viewing X-ray films. Extremities with soiled bandages were examined and bandages were handled without gloves. The surgeon made readjustments of mechanical supports and traction apparatus. Some wounds were exposed in the wards and examined. At one bed inquiry was made concerning the hydration and nutrition of the patient. The condition of the tongue was noted and its wetness was determined by the unwashed finger of the surgeon stroked across the tongue surface. This finger was wiped on the surgeon's coat and the remark was made that the moisture on the finger indicated that the patient was not too dry. During the course of "rounds" the chief of the hospital entered the ward, and was first greeted in military fashion by the surgeon, and then by a handshake. Several cases were selected for further examination in the septic dressing room. This dressing room had three tables, each occupied by a patient with large wounds from which all dressings were removed. In this room no one wore a mask over the nose and mouth. Conversations were conducted over each wound and traffic through the doors, closing and opening, was active. A staircase just off the dressing room was being dry-swept and clouds of dust filled the hallway and the entrance to the dressing room.

The surgeon soon proceeded to examine one of the wounded men, and without washing his hands or donning gloves, he felt of the extremity from which the pus-soaked bandages were recently removed. After dressing the wound, the surgeon placed the used instruments on a tabletop, and proceeded to the next case without washing his hands. The American observer left the dressing room without shaking hands with the German surgeon. In later discussing the matter of infected wounds with a German medical officer, the observer learned that the Germans assumed automatically that all penetrating wounds received in combat would become infected, and that pus was anticipated. Perforating wounds were rarely disturbed, but instead were simply covered with dressings. The German medical officer claimed that most perforating wounds did exceedingly well except that occasionally an aneurysm developed which required treatment. All wounds due to penetrating missiles, shell or bomb fragments, became infected and healed by granulation following infection.

When the US observer discussed the problem of infected wounds with another German medical officer, it was brought out that primary surgery done immediately was most essential. Lacking this, wounds became infected and the following reasons were given for lack of immediate care:

(1) Inadequate medical personnel were available to the German medical service. Many medical men were driven out of Germany during a seven-year period from 1933 to 1939, for reasons unrelated to their medical practice. Medical schools were depleted of teaching personnel and the number of graduating physicians gradually diminished. Early in the Russian Campaign, many medical men, acting as company officers, took up positions with the infantry in the front lines. The gradually increasing number of patients requiring surgical care increased the number of patients for each medical officer. As a result, this disproportion was equivalent to a decrease in medical personnel.

(2) Large numbers of battle casualties admitted to field hospitals in short periods of time made adequate surgery impossible. One German surgeon interviewed pointed out that when acting as a surgeon in the city of Naples in September 1943, it was not unusual for him to care for fresh

wounds by complete excision and primary suture. The infection rate was approximately 4% in these fresh cases and approached favorably the infection rate to which he was accustomed in civilian practice. However, he said, operative procedures which would require an hour had to be done in less than one minute when he was active on the Russian front. In one three-day period in Russia 1000 battle casualties were admitted to a field hospital whose medical personnel consisted of two doctors, no nurses, and considerable number of enlisted men. To devote more than a few minutes to each case was, he attested, impossible. Aside from an incision for decompression of tissues and application of a dressing, bandages and splint, nothing else could be done. He was aware that these steps would not prevent infection in a wound. Perforating wounds were rarely bothered with; dressings were applied and patients frequently returned to duty.

(3) Speaking again of the Russian Campaigns, in comparison to the closing phases of the Italian Campaign, this German medical officer stated that during the advance on Stalingrad the German Armies progressed at the rate of forty to sixty kilometers a day. Patients could not be kept in any hospital for any length of time. Frequently patients had to be evacuated to the rear without any sort of initial treatment and days were required before the patient arrived at an installation where surgery could be accomplished. During the winter months long trips in the icy cold of Russia made travel hazardous and for many patients, fatal. Not only were patients frozen to death because of inadequate covering but also many arrived in such poor condition that many hours or days were required to resuscitate them so that they could tolerate even a small degree of surgery. On the Italian front travel by day for wounded patients was extremely hazardous because of the narrow roads over mountain passes, and the constant presence of Allied airplanes over German lines of communications. Transportation of the wounded to the rear could be accomplished only at night, and the long trips in the mountains were time-consuming and exhausting to the patients.

(4) Lack of adequate supplies and equipment was also given by this German medical officer as a reason for the deterioration of the Wehrmacht's medical service. Many patients died from exsanguination because neither blood nor a blood substitute was available at the field hospitals. Many patients with small wounds developed infection because of the precarious condition in which they arrived at the base hospital after a long journey, without proper dressings or immobilization of the wounds. There were no blood banks to furnish blood for the restoration of blood volume. With the decreasing number of medical personnel and the increasing hunger of the Wehrmacht for more manpower the obtaining of blood for transfusions became more and more difficult. Plasma was unobtainable. Penicillin was unknown. Sulfonamides were used but were felt by the Germans to be most useful only in acute infections, and to have no particular value

in the treatment of patients from whose wounds flowed large amounts of purulent material. No new discoveries in chemotherapy had been made, and while patients received large amounts of drugs, ineffectiveness had been noted in patients who had had inadequate wound surgery.

(5) Finally, this medical officer felt that one of the greatest reasons for lack of immediate care was the general deterioration in German medical officers. The mental status of the average medical officer, and his morale, were low for many reasons, each resulting in deteriorating care for patients. Among these factors was the large number of infected wounds, leading doctors to feel that all wounds were automatically infected; the inadequate number of personnel; the lack of care possible because of constant evacuation; the lack of liaison, there being no uniform treatment plan throughout the German medical service; the entrance into the service of young, poorly-trained surgeons, "graduate wonders" who knew little or nothing of the principles of surgery; the class distinction favoring the Luftwaffe, SS and high-ranking officers; and the placement of medical officers in high positions by political rather than professional standards. All of these points weighed heavily on the mind of the conscientious surgeon and succeeded in wearing down professional morale.

This had been a discussion of wound infections, which, according to the German consultant, were just as frequent in this war in the German army as in World War I. As such, it has reported generally most of the negative aspects of German surgery and surgical practice. There are, however, many positive aspects, which somewhat redeem the German practices in the eyes of an American observer. Therefore, a brief description of certain German techniques, such as treatment for shock and hemorrhage, extremity wounds, head wounds, intrathoracic wounds, and abdominal wounds, is felt to be in order here.

Wounds received in shock were treated by the use of external heat, stimulants, infusion of peristone and direct blood transfusion. Peristone had not been available in all German installations. The medical units in the divisional area were given first priority on peristone, but it was frequently not available to them. German medical officers claimed that peristone was a good plasma substitute, and that its osmotic properties were such that it was retained in the vascular system from twelve to fourteen hours. It was furnished in 500 cc. units. Usually one and never more than two units were used in the treatment of one patient. All blood transfusions were accomplished by the direct method. Blood was transfused in amounts of 200 cc, 300 cc, 500 cc, 800 cc, and never more than 1000 cc. Hence the most a patient in shock might receive would be 1000 cc of peristone and 1000 cc of blood. The general German belief seemed to be that if the pulse volume did not approach normal, after such treatment no surgery was to be performed. Some German surgeons interviewed were opposed to using more than 200 to 300 cc of blood at one time. The extreme pallor of many and moderate pallor of most of the wounded seen in German hospitals were further evidence that little blood was administered.

This type management of shock and hemorrhage was in sharp contrast to American methods whereby plasma is made available and used in quantities sufficient for the needs in all forward medical units of a division; and whereby banked blood is available in adequate quantities in all army hospitals including field hospitals adjacent to division clearing stations.

The bulk of extremity wounds suffered in the Wehrmacht were given primary surgical treatment in the Hauptverbandplatz or the Feldlazarett. In rush periods this surgery consisted of no more than incision of skin and fascial planes, the removal of gross debris and devitalized tissue, and usually trimming of devitalized edges of the skin wound. The careful wound excision practiced by Allied surgeons was done in German hospitals only in rare instances. One German surgeon reported that he had performed only four or five such operations in as many years of war surgery. In these he had done a primary wound closure. It was evident in many of the patients seen that practically no wound excision had been accomplished, since much devitalized tissue was left behind, and frequently wounds were primarily drained after no more than a fasciotomy. Perforating wounds from small arms missiles or small high explosive shell fragments had no surgery performed. This applied to wounds of joints and wounds involving bone unless there was a large wound of exit. Splinting of extremities after surgery varied. In several hospitals visited, surgeons stated that temporary wooden or wire ladder splints were applied for three to five days, following which treatment the limbs were put in plaster if infection did not develop. Most of the other hospitals reported that plaster was applied immediately after surgery. In either instance, the plaster was always padded and windows were cut over the wounds to permit inspection and dressing.

Compound fractures of the femur were put up in skeletal traction in both field and general hospitals. Kirchner wires were used in applying skeletal traction. When infection developed, the limb was incorporated in plaster, but some traction was usually continued. An ingenious apparatus made of perforated metal pipes served as a substitute for the ordinary Balkan frame. It was capable of many combinations to secure, easily and simply, pulley wheels in the desired position for any sort of traction. In some instances a complete Balkan frame was fashioned. In most cases, however, one pipe, which clamped to the metal hospital bed, sufficed to support sufficient side arms to provide the necessary number of pulley wheels in the proper positions. Walking, unpadded plaster spicas, after the method of Boehler, were used in the management of some of the simple fractures of the femur, and in some compound fractures after the soft tissue wounds had healed. They were not used early in the management of fresh compound fractures from bullet or shell fragment wounds as Truetta used them in the Spanish Civil War. In badly damaged heels, one surgeon was practising excision of the talus, calcaneus, and one half of the scaphoid and cuboid, then placing the foot in a drop position and anchoring it there with a Steinman pin. He said that one-quarter to one-third of the cases so treated got functional results, but the remainder required amputation. Those getting a "functional result" were fitted with a below the knee prosthesis.

Two surgeons were found who had been using the Kuntscher nail in the treatment of certain fractures of the long bones. It was reported by two surgical consultants that for a time many surgeons attempted the use of this intramedullary nail with poor results, including osteomyelitis and death from shock. Following this experimentation, a few surgeons were designated who might use the method when they thought it indicated. The original work in Germany on this intramedullary nail was done by Kuntscher at the University at Kiel beginning in 1937. It was first tried on animals. Examination of the bones histologically at various periods after nailing led to the conclusion that approximately one-third of the marrow is destroyed and that small fat emboli are nearly always dislodged. One surgeon who participated in the original study at Kiel stated that he had records of 550 cases, not all his own, in which the Kuntscher nail had been used. Fat embolism had occurred in a few of these cases but in no instance did it lead to a fatality. This surgeon felt that its usefulness was chiefly in closed fractures of the middle third of the femur, in which the fracture line was transverse or nearly so. Such patients could walk without any splinting eight to fourteen days after the operation. This surgeon did not feel it an advisable procedure in tibial fractures and rarely used it in fractures of the humerus, radius, or ulna. It could be used in compound transverse fractures of the femoral shaft after the wound had healed or when infection was absent. One surgeon had used it in a few infected compound fractures of the humerus and femur when the desirability of fixation seemed to outweigh the danger of using it in the presence of infection.

In the field of head surgery, only a few intracranial wounds were found in the hospitals visited. One hospital at Merano and one at Gardone Riviera held the largest concentrations of head wounds. Of a sample of forty head cases, at least thirty needed further neurosurgery. There were also approximately twelve with wounds of the spinal cord, a similar proportion of which needed further surgery. Neurosurgical techniques in practice among the German hospitals visited were generally barely adequate, and often under the standards set in Allied armies.

Nearly all of the patients seen in German hospitals with intrathoracic wounds had empyema. Of course, most of those seen had incurred their wounds months or even as long as two years before. Opinion expressed by German surgeons concerning the management of chest wounds varied in some particulars, but regarding major policies were in unanimity. No facilities were available for gas anesthesia or for positive pressure delivered by anesthetic machine. A good oxygen therapy machine was available, but according to statements of the Germans, it was seldom if ever used for expanding the lungs during the course of intrathoracic surgery. No endotracheal tubes were seen nor was the use of endotracheal anesthesia mentioned in a hospital. Local, evipan, or ether by open drop was the anesthetic employed in what chest surgery was accomplished. Opinions concerning the indications for and time of aspiration of hemothoraces varied considerably. Some surgeons stated that aspiration was never performed except to relieve dyspnea arising from a large hemothorax or hemopneumothorax. Others stated that it was performed during the first five days after wounding. One consulting surgeon stated that early in the war aspiration was performed after five days unless dyspnea made it mandatory earlier, but that more recently aspiration was performed after the patient reacted from shock, which was usually two days after wounding. It was obvious that the policy of early, repeated aspiration of hemothorax was not practiced as in the Allied armies.

The incidence of empyema was reported at one hospital as 60% in shell fragment wounds of the chest and 30% in bullet wounds of the chest. In another hospital, an incidence of 50% in all intrathoracic wounds was reported. The treatment of empyema seemed uniform in all the hospitals. Closed intercostal drainage was instituted as soon as the prescence of pus or infection in the pleura was demonstrated. The catheter was attached to a water seal bottle which in most instances was in turn connected with a pair of bottles providing suction after the Wangenstein method. This procedure was continued until the cavity was obliterated or until after six months the empyema was adjudged chronic and a thoracoplasty and decortication were performed. Rib resection for drainage was rarely employed.

Only a very few patients with thoraco-abdominal wounds were seen. These few had not had extensive wounds and their surgical care had consisted of laparotomy and simple closure of the chest wall wound. No cases were seen in which transdiaphragmatic surgery had been accomplished at thoracotomy. Lacking the facilities for positive pressure ether-oxygen anesthesia and well-trained anesthetists, it seemed obvious that modern intrathoracic and transdiaphragmatic surgery were not available to the German wounded.

Only a few patients with abdominal wounds were found in the German hospitals which were captured or which fell into Allied hands with the collapse of the Wehrmacht. This was not surprising, if the tactical situation of the preceding month was viewed in relation to the German policy concerning the care of the seriously wounded which was outlined in the hospitalization and evacuation section of this chapter. With the confusion and heavy casualty load of their crushing defeat in the German stand against the Allies' last push, it was probable that few with abdominal wounds were fortunate enough to receive any surgical attention. In one hospital two patients were found who had had abdominal surgery. One of these had had a negative exploratory laparotomy and had developed a huge incisional hernia. The other had a wound of the small intestine and was making a satisfactory recovery.

In interviews with German surgeons and in studying their Army manual on surgery, it became apparent that the Germans had been impressed with the advantage of early surgery in forward installations for those casualties with intra-abdominal wounds. General principles in this surgery were found to be quite similar to those in practice among the US Forces. Wounds of the stomach and small intestine were repaired and usually a proximal cecostomy done. Large or severe wounds of the colon were exteriorized. Wounds of the liver were drained. Those who did not respond to shock therapy were not given the benefit of emergency surgery unless it was felt that there was a continuing severe hemorrhage. Lacking whole blood in adequate amounts and using only direct transfusions in amounts never totalling more than 1000 cc, it is probable that the Germans would not have bettered their mortality rate by attempting surgery on the abdominally wounded. What the Fifth Army accomplished in this type surgery was dependent not only on the skill of the surgeons, but as well upon the skill and superior equipment of anesthetists, the judicious use of available banked blood, oxygen and all the other facilities provided to insure the best possible care of every wounded man.

This was the surgical service of the German army as it existed at the conclusion of hostilities in Italy. Its negative aspects, viewed objectively and dispassionately, seemed certainly to outweigh its positive. One of the American observers seemed to express the unanimous opinion of all when he stated: "My reaction to this visit is not one of condemnation for the type of surgery and surgical care that the German soldier receives from medical officers in German installations. Rather it is one of high praise for the excellence of the American medical service. . . . To see and discuss the German wounded offers the contrast by which to bring into better view what has actually been accomplished in our own medical service."

4. *PREVENTIVE MEDICINE AND MEDICAL CARE*

Militarily, preventive medicine is far more important to the combat effectiveness of any command, Allied or German, than the surgical or medical services. To the German Army, surgically understaffed and underequipped, and seemingly with a lower moral conception of the medical mission than our own, a seriously wounded man who could not fight again, even if his life were saved, was not worth bothering with, or expending precious time and supplies upon. But if, by means of preventive medicine, even one man could be spared an infectious disease which would incapacitate him for only three days, then preventive medicine was the field upon which the harshly realistic Wehrmacht would concentrate its efforts. This helps to explain why preventive medicine was under rigid military control in the German Army, and at the same time why German standards of preventive medicine, considering the equipment available for their enforcement, compared more favorably with preventive medicine as instituted in the United States Army than did German surgical standards with our own.

Mess sanitation in the Wehrmacht was limited by the type of mess served. Food was prepared in mobile ranges, and generally consisted of a stew, bread, tea or coffee. No attempt was made to screen field kitchens, but if troops were situated in buildings and screening was available, the kitchen was screened. However, one directive published by German headquarters in 1945 prohibited the use of screening except for buildings in malarious areas. There was no system of mess kit washing similar to that practised in the US Army. Usually the German soldier washed his mess kit in a stream, or at a well or cold water tap. Sometimes hot water was supplied from the field ranges, or occasionally it was heated in a bucket or can over a wood fire, but such procedures were the exception. Provisions for hot water depended on the interest in sanitation evidenced by the company commander, which ordinarily was slight. No soap was issued for mess gear washing, and the allowance of soap for bathing and washing clothing was so small that very few soldiers ever used part of their soap ration for washing mess kits. Instead sand or gravel was used to remove the grease from the mess kits. Soap and washing soda were available for use in the kitchens, in small amounts.

Bread was transported without any protective covering from the field bakeries to unit messes. Fruits and vegetables to be eaten uncooked were washed first in raw water and then in boiled water. In areas where amoebic dysentery was prevalent, directives were issued ordering fruits and vegetables to be soaked in a 1-5000 solution of potassium permanganate; in practice, however, this procedure was reported to be seldom followed. Chlorine washing of fruits and vegetables was unheard of in the German Army in Italy. Garbage was usually disposed of to civilians. In the last months of the campaign, many units kept hogs to which they fed food scraps. Some garbage was burned. Directives were issued requiring soakage pits for waste water, but in actuality these pits were seldom constructed. Since there were no mess kit washing facilities, German kitchens had less waste water than normally found in US kitchens. German food handlers were inspected weekly and stool examinations were conducted four times a year. Consumption of raw milk or cheese made from raw milk was forbidden.

In rear areas, the Germans used box-type latrines similar to US box latrines. A squat-type latrine with lid was also used frequently. In forward areas, straddle trenches were dug, or each man was required to cover his own excrement by digging a small hole with a spade, similar to US "catholes". Latrine pits were treated with lime, never with oil of any sort. There was never a sufficient supply of pyrethreum spray for use in latrines.

Provisions for water supply in the German Army were grossly inadequate. In forward areas, the German soldier was given boiled tea or coffee rather than water; he had no "GI" drinking water whatsoever. The supply of tea and coffee depended on the tactical situation. If kitchens were far enough forward, the supply was sufficient, but otherwise the soldier was forced to resort to local water sources to allay his thirst. The supply of tea and coffee even in bivouac areas was never unlimited: there the soldier received a rationed quantity of one or two liters and no more. Nothing existed in the German Army similar to the US water sterilizing bag, to which an American soldier in rear areas can go at all times for additional fluids. Water sterilizing tablets, comparable to our Halazone, and thiosulphate tablets, such as the British use, were used only to a limited extent in the German Army and were never popularized. In rear areas, troops ordinarily used the town water supply, which was tested by the corps or army hygiene officer. If four samples taken the same day at different points in the town were reported as bacteriologically potable, the water was approved for drinking. In the field water was transported to kitchens in cans similar to the US five-gallon water can. Sanitary companies and motorized field hospitals had water trailers.

A few water purification units operated in the German Army, but no attempt was made to furnish all troops with water from these units. Basically, these units consisted of three tanks mounted on a large lorry. Water was pumped from one tank to another through all three, each of which contained lime and iron chloride. From the third tank the water passed through a Seitz type filter which rendered it bacteriologically potable. The output of this unit was normally 5000 liters a day, but it could be increased to 8000–12000 liters for short periods. (The US portable unit delivers about 3600 liters an hour and the US mobile unit 21,160 liters an hour). These German units were operated by the Medical Department. The chief objection to such units was that the Seitz filter discs soon became clogged and had to be replaced. The water from these units was not chlorinated, the Germans using chlorine only where necessary to treat city supplies. Another type of water filter used by the Germans was a portable apparatus carried on the back and capable of producing 200 liters a day. One such filter was issued for each battalion, or one for each separate company if the company had a medical officer attached. The apparatus was issued to and operated by the Medical Department. These filters were never popular and were seldom used except to clear up turbid water. The filter discs had to be replaced frequently and were always difficult to obtain.

German malaria control in Italy was centralized in an antimalaria staff at Army Group Headquarters. This staff consisted of a major in charge assisted by two entomologists and one clerk. Operating directly under this staff were two or three malaria stations (comparable to US Malaria Survey Units), each consisting of one entomologist and two drivers, one clerk and one technician. These stations operated in malarious areas, effecting surveys and advising on malaria control procedures. Each German division had a sanitary officer in charge of malaria control, who was assisted by six or eight enlisted men. If more labor was needed, civilians or prisoners were used, and if necessary, help was given by engineer troops. In general, malaria control measures were carried out by troop units themselves, and no malaria control units as such were available. Division malaria control officers rendered monthly reports to the Army Group malaria staff.

Paris green or calcium arsenite was used for larviciding since oil was seldom available for such uses. A very limited amount of DDT was available to the Germans, however, due to the scarcity of screening, as has been pointed out, its use was restricted to buildings used as quarters in malarious areas. Mosquito bed nets were used, and in heavily malarious areas, guards used head nets and gloves. Short trousers and rolled shirt sleeves were forbidden in malarious areas.

The 1945 German malaria directive called for atabrine prophylaxis to begin in Italy on 15 April, south of a line from Trieste, through Gorizia, Udine, Vicenza, Verona, Brescia, Bergamo, Novarro, Turin and Cuneo. The dosage was .06 grams daily, and it was to be given by roster (US dosage has been .10 grams daily). If the malaria rate became unduly high in any unit, the surgeon was to consult with the anti-malaria staff on the advisability of giving all troops a therapeutic course of atabrine and then resuming the prophylactic dosage. The therapeutic dosage of atabrine was .10 grams three times a day for seven days, followed by .01 grams of plasmochin three times a day for three days. In severe cases in the German army, an intramuscular dose of .3 grams of plasmochin might be administered, or the daily dose of atabrine could be increased up to .9 grams, or quinine could be given up to 1 gram daily. Another routine treatment consisted of one tablet of a combination of quinine or plasmochin given three times a day for twenty-one days. The use of thick smears was urged in making the diagnosis of malaria, and smears were to be forwarded with transferred patients. All malaria patients were required to be treated as near the front as possible, and evacuation to Germany was forbidden except in the presence of severe complications. A hospital specializing in tropical disease was located at Cortina d'Ampezzo, and malarial cases presenting special problems were transferred there.

For louse control, the Germans used several louse powders called Delicia, LouseEX and Lauscto. Delicia is thought to have had a cresol base, but the ingredients of the other powders are not known. Another powder, "Russle", is said to have contained horse "sweat" extracted from horse blankets, but later this substance was synthesized. It had been noted that horse blankets never became lousy, and that lice would leave an infested person if he slept in a blanket which had been used to cover a horse. This latter powder was never popular—it had a bad odor and caused skin eruptions in the troops. The other three powders mentioned above were moderately effective. For the most part, the Germans depended on hot air sterilization of clothing and blankets to kill lice. Every month, battalions were required to have the clothing and blankets of their personnel disinfested, and troops returning from the front were bathed and disinfested routinely. A small amount of DDT powder (called by the Germans "Gix") was available for dusting men found to be infested with lice. Steam disinfestation of clothing was not practical because it damaged the cellulose fibers of German ersatz fabrics. Methyl bromide was not used, but formalin in glass ampules was available for disinfesting blankets. Impregnation of clothing with a liquid preparation of Delicia was effective for from ten to twenty days.

A few bath units were available for front line troops, set up in connection with hot air sterilization units, but for the most part German soldiers had to seek out their own bathing facilities. Since they usually occupied buildings, this was not a great problem, except for the important fact that soap was always short.

Two types of typhus vaccine were used, the Cox type similar to US vaccine, and the Weigl type prepared from lice. A Roumanian type vaccine prepared from mouse lungs was tried out, but was found to be not very effective. Only sufficient vaccine was available for vaccination of medical personnel and key personnel over forty years of age.

The German Army in Italy had considerable trench foot in the Apennines during the winter of 1944–45 (when US rates were remarkably low), and this was attributed by German medical officers to the wet, cold, but not freezing weather, and to the failure of troops to guard against trench foot. Many of the soldiers had come from the Russian front where it was generally far colder, and they did not expect trench foot in the comparatively mild climate of Italy. Prevention of trench foot in the German military depended on the individual's taking proper care of his feet, and having a supply of warm and dry socks and shoes. Medical officers were responsible for seeing that the troops were properly instructed and that the instructions were carried out. This was of course entirely contrary to US practice where the command elements are responsible that anti-trench foot precautions are properly carried out. German medical officers were also responsible for checking shoes and socks of troops. Leather shoes were worn in temperatures above freezing, and in Russia felt boots were worn in lower temperatures. A sock exchange system operated in some units, where civilian women were hired to launder the socks. Paper and straw were often used for extra warmth in boots. A salicin ointment was used as an anti-frost bite cream.

The German army emphasized abstinence as its strongest venereal disease control measure, but at the same time it operated controlled brothels. The prostitutes in these brothels were examined daily by a German doctor or by an Italian physician. Smears were taken and serological tests were made weekly. Civilians were not admitted to army brothels. Upon entering a brothel the soldier was given a form in duplicate on which was recorded his name and unit, the date, the designation of the brothel and the name of the prostitute. He was examined for the presence of pests or venereal disease and was given a condom. Both the prostitute and the soldier were subject to punishment if the condom was not used. A prophylactic treatment was administered before the soldier left the brothel. Prophylaxis consisted of a wash with soap and water and bichloride of mercury, followed by an intraurethral injection of 2% protargol and the application of calomel ointment. Sulfa drugs were not used since in Russia sulfa drug prophylaxis had resulted in strains of gonococci resistant to treatment with sulfa drugs. Chemical prophylactic kits containing calomel ointment were available to the German soldier but were not much used.

The simple facts of the matter are that in the German Army, controlled prostitution was not successful in the prevention of venereal diseases. That it was not successful was probably due in main to the fact that the average German soldier did not choose to frequent an Army-operated house of prostitution, for two inter-related reasons: he objected morally to having sexual intercourse with a woman whom he knew just previous to him had entertained other soldiers; and, following traditional male instincts, he preferred the chase and the conquest of a clandestine to the easy procurement of an admitted prostitute, even though he probably knew that the clandestine was quite as sexually experienced as the woman in the Army-controlled house. That this was the case is not evident from German statistics concerning venereal disease, but all German medical officers interviewed readily admitted the inaccuracy of their statistical procedures and records. It is evident, however, from the following portion of a letter to all troops from Field Marshal Albert Kesselring, Commander in Chief Army Group "C," dated 11 January 1945, wherein it can readily be seen that the majority of German soldiers did not patronize Army-operated brothels:

> The attitude towards illegitimate sexual intercourse is a matter of personal ethics and world philosophy, a subject which is not to be discussed at this time. But since such intercourse causes widespread VD in the Army, the High Command is compelled to adopt special measures.
>
> It has been proven that the ordered treatment and the prescribed prophylaxis are protections against the disease. *69% of the infected soldiers, admitted to the hospitals of the Army Group during November did not undergo the ordered preventive treatment.*
>
> This fact proves that during the past year the troops did not exercise the proper attention towards these diseases which endanger the health, the total defense potential and also the future generations of the German people.
>
> The non-compliance with the ordered preventive treatments is a violation of

> discipline and punishable as such. In addition, a six months' furlough suspension is enforced against the infected soldier.
>
> If the soldier conceals the disease and takes own treatments, he is charged with self-mutilation.[1]

The German army had always seemed unwilling to admit that psychoneurosis existed in the members of the master race. Their statistics, even though of unreliable accuracy, have never even allotted space to neuropsychiatric disorders of any nature. For this reason, it was extremely difficult, even after the German collaspe of May 1945, to obtain an adequate picture of either the prevention or treatment of psychoneurosis in the German army, or to assess what little material was gathered. During the winter of 1944–45, a captured manual for the use of German medical officers in the field fell into US hands. The sections on "pure" psychiatry were brief and gave little insight into the extent of the problem of combat reactions. The section of gastric complaints, however, was quite explicit in its discussion of the psychogenic aspects. A single careful examination, including hospitalization if necessary, was advocated, but once a man had been returned to duty, further examinations were forbidden and disciplinary measures (including deprivation of tobacco and alcohol) were prescribed if complaints continued.

After the German surrender on 2 May, an opportunity arose to question a captured medical officer with psychiatric training. Although he had not been primarily a psychiatrist in the German army, he had had two years training in the specialty at Frankfurt as a civilian, and consequently he was interested in psychiatric problems. This officer declared outright that German neuropsychiatric statistics were completely inaccurate, and he confessed that he could not give a valid estimate of the actual incidence within the army. He quoted a report of the previous year which had claimed only 4000 cases in the entire German army during a certain period. Since a single Bavarian division had had half that many during a similar period of World War I, he pointed out that present figures were absurd. Apparently there were no written directives which limited the making of psychiatric diagnoses, but there was a definite tendency to mislabel them. Obviously, cases did occur, and this captured medical officer attested that at one time German Army Group "C" had a small hospital located near Verona, which was devoted entirely to the treatment of hysterical reactions. Typically, however, this German officer stated that Wehrmacht troops were so well trained that casualties of a psychiatric type did not increase greatly with heavy combat action.

In discussing German handling of neuropsychiatric cases, the German officer said there was some variation in different commands. Chemical hypnosis, induced by pentothal sodium in US psychiatric procedures, was not utilized in the German establishment. Shock treatments were employed only to render patients fit for transportation. Psychotics were removed from the Army as soon as possible to reduce the chances of the Army's being held responsible for complications in the course of treatment.

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[1] Translated by G–2, Headquarters Fifth Army.

An inspection during June of medical treatment standards in practice among German medical officers at Merano, showed an adequacy of knowledge, methods, and diagnostic procedures, although deficient by American standards. Of the approximately 12,000 patients hospitalized at Merano at the time, about 20% were medical patients, mostly of the same types observed in US general hospitals—patients severely ill or with protracted illness. The Chiefs of Medical Service and the consultants were apparently men of attainment, and the ward officers showed evidence of fairly good training. Records were in excellent condition. Laboratory facilities including X-ray and electrocardiography were available and were used intelligently. Drugs and other therapeutic agents semed sufficient, although penicillin and sulfadiazine were not available.

Numerous cases of infectious hepatitis were found in this inspection. Their stay in the hospital averaged from fifty to sixty days. High carbohydrate-low fat diets were instituted, but protein was not emphasized as in US hepatitis treatment. Such tests as the liver function, cephalin flocculation and bromosulfalein tests were not used. The Germans considered serum Vilirubin and Takata Ava tests best regarding liver functions. In severe early cases of hepatitis, plasma and glucose were not given intravenously, and the patient was given no exercise tolerance before leaving the hospital.

Field nephritis constituted an amazingly large problem in the German army. There were 180 cases in the hospitals visited, and a consulting German "nephritis specialist" stated that he had observed over three thousand cases on the Russian front. This incidence in the German Army was hard to explain, since there has been so little nephritis observed among Allied soldiers. The exact pathology or etiology was undetermined, but it seemed probable that this incidence represented a true glomerular nephritis. Treatment consisted of the Karell diet in the early stages and later, a low protein, salt-free diet. Protracted bed rest was necessary in all cases, none of whom were returned to duty before at least six months.

Several cases of bacillary dysentery were observed, but since no sulfadiazine was available, they were treated with a preparation called Cibison Elcudron, actually a sulfathiazol derivative. Results were good in most cases. Three cases of amoebic liver abscess were seen, being treated by a dosage of .065 grams Emetine daily for from ten to twelve days. No operations were performed, although in one case, the abscess was drained with a needle. These patients were improving satisfactorily.

No cases of atypical pneumonia were encountered. The Germans had only recently become familiar with this disease, and first learned of it from Allied medical literature obtained through Switzerland. At no time had it been as prevalent among German troops as in the US Army, and the Germans had seen no explosive outbreaks comparable to those experienced in Fifth Army early in 1945. Four cases of post-diphtheritic polyneuritis were seen, and the German medical officers stated that about 4% of their diphtheria cases developed polyneuritis. This high rate was felt to be due to two factors: first, it was usually three or four days after the onset of the disease before the patient was hospitalized; and second, standard treatment consisted only of 25,000 units of antitoxin, and many cases received only 15,000 units. Several duodenal ulcers were also encountered, diagnosis having been established by X-ray. Treatment consisted of bed rest and a diet similar to the American Sippy diet. Alkalies were not given. Hospitalization for duodenal ulcer lasted approximately thirty days, at the end of which time patients were discharged to one of the "Magenbattalions", or "Stomach" battalions, a field organization absolutely unique in the German army, where soldiers performed light work and were fed special diets. Duodenal ulcer cases were not discharged from the army.

5. *MEDICAL SUPPLY*

The German medical establishment in Italy was almost completely self-sufficient, as it had to be, with the Brenner rail route to Germany under constant Allied air attack. On 4 May, two days after the German surrender, Fifth Army assumed control of the Base Medical Depot at Merano, along with a large factory equipped to manufacture many items such as cotton, bandages, drugs and narcotics. Included in the factory was a well-equipped laboratory capable of performing biochemical and physio-chemical procedures. The equipment was extremely modern in design, and apparently expensive and valuable. This factory employed approximately nine hundred German military workers. A few civilian men and women were employed by the Germans, but for the most part this factory was run by German WACs and enlisted technicians.

The Merano medical depot, as apart from the factory, contained approximately 2000 tons of medical supplies when it was captured; with consolidation of other north Italy depots into this one, the stock levels were built up to 9000 tons within a few weeks. The depot did not employ civilians, and operated with a complement of three hundred enlisted men and forty WACs. This depot operated in similar fashion to a US base section depot, with the exception that platoons organized from its basic complement were attached to the various armies of Army Group "C". Thus, each army had no depot unit solely its own, as is the case in the US army.

The medical supplies stocked at this depot were generally of an inferior quality. A certain cheapness, typical in many ways of the entire German medical service, was noticeable in almost all items of expendable supply. A paper material, somewhat like crepe, was used as a substitute for gauze in the dressing of wounds. Also, a still thinner paper was placed under casts as a substitute for cotton batting. Many of the medications found in this depot were of Italian manufacture, and not of a very high quality. The medical equipment generally was substantial and well-made, however, but more suited for a civilian general hospital than for issue to a field medical service. Surgical and dental instrument sets were far too elaborate to insure a rapid replacement. X-ray equipment, including dental X-ray sets, was good, and especially designed chests were provided to aid in proper handling. Chests of a standard size and design were provided for mobile medical supply platoons. These chests were an admirable item, hinged on opposite edges, top and bottom, so that the chest could be opened from the top or the front, and when set up one on top of the other, provided an efficient and orderly establishment.

Liquid medicines were dispensed from large demijohns, and requisitioning units were required to furnish their own containers. When a sufficient supply of demijohns was lacking, bottles of all shapes and sizes were used. The general appearance of the pharmacy at the Merano depot was not one of orderly and neat management.

Thus German medical supply and equipment seem to summarize actually the entire German medical establishment: a service of great potential ability and technique, hampered by paucity of material and bogged down in the morass of politico-military interference over a long period of time.

Bibliographical Note

Medical Service in the Mediterranean and Minor Theaters is based upon a wide variety of sources, by far the largest category being the manuscript records of medical units, offices, and commands. Probably the most extensive and certainly the most important collection of these records is in the custody of the Historical Unit, USAMEDS. Others are deposited with the National Archives in Washington and in the Federal Records Center, Region 3, GSA, in Alexandria, Va.; still others are in the records centers at St. Louis and Kansas City, Mo. The Air Force records used are for the most part at the Air University, Maxwell Field, Ala.

After action and routine periodic reports—most of them annual but a few semiannual, quarterly, and even monthly—make up both the most extensive and the most useful body of records. These reports came from all levels of the Medical Department, from the theater surgeon's office and its various subdivisions through the surgeons of armies and air forces, corps, divisions, communications zones, base commands, and base sections. They came from hospitals of all types, medical battalions and often separate companies, medical supply depots, auxiliary surgical groups, and intermittently from all of the lesser units that made up the combat medical organization in a theater of operations. In some of the larger commands unit reports were supplemented or even replaced by histories of Medical Department activities, on a yearly or longer basis.

Another major source of information, like the unit reports administrative and logistical as well as clinical, is the Essential Technical Medical Data reports (ETMD's), issued monthly from July 1943 on by the theater medical section, by various subordinate commands, and by the individual hospitals. The ETMD's often contained situation reports and analyses of specific military operations. At the theater level a daily journal was maintained by the surgeon's office, highlighting important administrative developments. A series of circular letters dealt with a wide variety of matters such as the management of wounds; recommended therapy for specific diseases including dysentery, malaria, and hepatitis; the preferred use of drugs such as morphine, the sulfonamides, and penicillin; and many housekeeping chores on the order of record keeping and reporting. A similar but less extensive series of circular letters emanated from the medical secton of Allied Force Headquarters. Medical situation reports were issued by various commands, the most useful being those of the Peninsular Base Section during the Italian campaign. Use has also been made of private diaries, and of correspondence both private and official—for example, the frequent exchanges between the theater surgeon and The Surgeon General.

Other valuable documentary sources for the history of the Medical Department in the Mediterranean include the medical annexes of operations reports at army, corps, and division levels; and of various planning documents. Inspection reports are voluminous and in a degree of detail not usually found elsewhere. There are, in addition, special reports on all manner of topics from the incidence and treatment of particular diseases to discussions of improvised equipment; from supply and sanitation problems to ways of laying out a tent hospital. Methods of evacuation under various conditions, use of hospitals of different types and sizes, personnel problems, civil affairs problems, and many other topics swell the flood of investigations, reports, and studies. Interviews have also been used, supplemented by written comments from those who reviewed all or portions of this volume in manuscript form. Their names will be found in the acknowledgments at the end of the author's preface.

Although technically a secondary source, a multivolume manuscript history of the Medical Department in the Mediterranean Theater, prepared under the direction of the historical subsection of the theater surgeon's office and brought to a close in November 1945, is indispensable for its insights, for its use of many documents now unavailable, and for the eyewitness quality it gains by the participation of its authors in the events they narrate. Of particular value for the present work were: volume 1, Administration, by Kenneth W. Munden; volume 3, Hospital Construction, by Abraham I. Zelen; volume 6, Army Nurse Corps, by Anne F. Parsons and others; volume 7, Medical Supply, by William L. Davidson; volume 8, Field Operations, by Glenn Clift; volume 10, Hospitalization and Evacuation (rough draft, by A. I. Zelen; and volume 14, Final Report of the Plans and Operations Officer, by Col. Albert A. Biederman.

Another rewarding category of source material consists of numerous special articles on phases of military medicine in the Mediterranean and minor theaters in selected medical journals, most frequently in the *Medical Bulletin of the North African* [*Mediterranean*] *Theater of Operations,* published by the theater surgeon's office during 1944 and the first half of 1945; the *Bulletin of the U.S. Army Medical Department* published by the Office of The Surgeon General until unification at the end of 1949; and *Military Medicine* (formerly *The Military Surgeon*), organ of the Association of Military Surgeons. Administrative material, often of a firsthand character, will also be found in several volumes of the clinical series published by the Office of The Surgeon General and cited in the footnotes to the present work. Most frequently used were the volumes dealing with activities of medical and surgical consultants, the dental and veterinary histories, and the preventive medicine subseries, of which five volumes have so far appeared.

The broad military narrative that forms the framework within which the medical story becomes meaningful has, on the other hand, been told largely from published sources. The combat volumes of the series UNITED STATES ARMY IN WORLD WAR II have been followed insofar as they were available. George F. Howe, *Northwest Africa: Seizing the Initiative in the West,* appeared while the present work was in preparation; and the volume on the Sicily Campaign, Lt. Col. Albert N. Garland and Howard McGam Smyth, *Sicily and the Surrender of Italy,* was consulted in manuscript form. Similarly, in the preparation of Chapter I, Stetson Conn and Byron Fairchild, *The Framework of Hemisphere Defense,* and Conn, Rose Engelman, and Fairchild, *Guarding the United States and Its Outposts,* were used, the former in galley proof, the latter in manuscript. Chapter II relies at many points upon T. Vail Motter, *The Persian Corridor and Aid to Russia.*

A number of titles in the AMERICAN FORCES IN ACTION series were also valuable in summarizing the combat operations so essential to an understanding of the supporting medical activities. Those used were: *To Bizerte With the II Corps; Salerno: American Operations from the Beaches to the Volturno; Volturno: From the Volturno to the Winter Line; Fifth Army at the Winter Line;* and *Anzio Beachhead.*

Appropriate volumes of Wesley Frank Craven and James Lea Cate, editors, "The Army Air Force in World War II," and of Samuel Eliot Morison, "History of United States Naval Operations in World War II," helped give dimension to a narrative that includes five major amphibious operations. A number of military memoirs were also consulted, including those of Eisenhower, Bradley, Patton, Clark, Truscott, Montgomery, Alexander, and Kesselring, but were used with caution.

Official histories of Fifth and Seventh Armies complied contemporaneously and published while the respective armies were still in active status contain medical and logistical as well as combat material. The nine-volume *Fifth Army History* has been usefully condensed to a single book, *From Salerno to the Alps,* by Chester G. Starr, Jr., who as a member of the Fifth Army historical staff was one of the authors of the larger work.

Glossary

AAF	Army Air Forces
AAFSC	Army Air Forces Service Command
ABC	Adriatic Base Command
ABS	Atlantic Base Section
ACC	Allied Control Commission
ADMS	Assistant Director, Medical Services
AFHQ	Allied Force Headquarters
AGWAR	Adjutant General, War Department
AMET	Africa–Middle East Theater
AMEW	Africa–Middle East Wing
AMG	Allied Military Government
AMGOT	Allied Military Government of Occupied Territory
ANVIL	Early plan for invasion of southern France
Armd	Armored
ASRS	Adjusted Service Rating Score
ASW	Assistant Secretary of War
ATC	Air Transport Command
Atl	Atlantic
AVALANCHE	Invasion of Italy at Salerno
Aux	Auxiliary
BBC	Bermuda Base Command
BE	BLUIE EAST (U.S. air bases in Greenland)
BEF	Brazilian Expeditionary Force
BLACKSTONE	Subtask force of Western Task Force for the attack on Safi
Bn	Battalion
BRUSHWOOD	Subtask force of Western Task Force for the attack on Fedala
BW	BLUIE WEST (U.S. air bases in Greenland)
CBI	China, Burma, India
CCB	Combat Command B
CCS	Combined Chiefs of Staff
CENT	Task force in Sicily assault landing
CDC	Caribbean Defense Command
CG	Commanding general
CinC	Commander in Chief
Cir	Circular
CO	Commanding officer
Co	Company
CofS	Chief of Staff
Comd	Command
Comdr	Commander
CONAD	Continental Advance Section

COMZ	Communications Zone
C&R	Convalescent and rehabilitation
CRIMSON	Air routes through central and northeastern Canada, part of the air ferry route to the British Isles
CRYSTAL	Meteorological stations in northern Canada
DCCAO	Deputy Chief Civil Affairs Office
DDMS	Deputy Director, Medical Services
Detach	Detachment
DIME	Task force in Sicily assault landing
Dir	Director
Div	Division
DMS	Director, Medical Services
Doc	Document
DRAGOON	Allied invasion of southern coast of France, 15 August 1944
DSM	Distinguished Service Medal
EASCOM	Eastern Command
EBS	Eastern Base Section
ETMD	Essential technical medical data
ETO	European Theater of Operations
ETOUSA	European Theater of Operations, U.S. Army
Evac	Evacuation hospital
FEC	French Expeditionary Corps
FRANTIC	AAF shuttle bombing of Axis-controlled Europe from bases in United Kingdom, Italy, and USSR
FUO	Fever undetermined origin
GBC	Greenland Base Command
GOALPOST	Subtask force of Western Task Force for assault landing in Mehdia–Port-Lyautey area, North Africa
Gp	Group
Hist	Historical, history
Hosp	Hospital
HUSKY	Allied invasion of Sicily, July 1943
IBC	Iceland Base Command
IBS	Island Base Section
IG	Inspector General
Interv	Interview
It	Italian
JOSS	Task force in Sicily assault landing
KOOL	Task force in Sicily assault landing

LCI	Landing craft, infantry
LofC	Line of communications
LST	Landing ship, tank
MAAF	Mediterranean Allied Air Forces
MAC	Medical Administrative Corps
MAETS	Medical air evacuation transport squadron
MBS	Mediterranean Base Section
MCD	Malaria control detachment
MCU	Malaria control unit
Med	Medical
MMU	Medical maintenance unit
MSU	Malaria survey unit
MTO	Mediterranean Theater of Operations
MTOUSA	Mediterranean Theater of Operations, U.S. Army
NAAF	Northwest African Air Forces
NATO	North African Theater of Operations
NATOUSA	North African Theater of Operations, U.S. Army
NBC	Newfoundland Base Command
NORBS	Northern Base Section
OBE	Order of the British Empire
Off	Officer
Opns	Operations
Ortho	Orthopedic
OSS	Office of Strategic Services
OVERLORD	Allied cross-Channel invasion of northwest Europe, June 1944
Ovhd	Overhead
PBS	Peninsular Base Section
PGC	Persian Gulf Command
PGSC	Persian Gulf Service Command
PT boat	Patrol vessel, motor torpedo boat
POW	Prisoner of war
QM	Quartermaster
RAAC	Rome Allied Area Command
RCAF	Royal Canadian Air Force
Rcd	Record
RCT	Regimental combat team
Regt	Regiment
Rpt	Report
Sec	Section
Sep	Separate
Serv	Service

SHAEF	Supreme Headquarters, Allied Expeditionary Force
SGO	Surgeon General's Office
SHINGLE	Amphibious operation at Anzio, Italy
Sitrep	Situation report
SnC	Sanitary Corps
SOLOC	Southern Line of Communications
SOS	Services of Supply
Sta	Station
Stat	Statistical
Suppl	Supplement, supplementary
Surg	Surgeon, surgical
SWPA	Southwest Pacific Area
TAS	The Air Surgeon
T/O	Table of Organization
TOE	Table of Organization and Equipment
TORCH	Allied invasion of Northwest Africa, November 1942
TRUST	Trieste–United States Troops
TSG	The Surgeon General
UNRRA	United Nations Relief and Rehabilitation Administration
USAAF	U.S. Army Air Forces
USAFCC	U.S. Army Forces in Central Canada
USAFEC	U.S. Army Forces in Eastern Canada
USAFICA	U.S. Army Forces in Central Africa
USAFIL	U.S. Army Forces in Liberia
USAFIME	U.S. Army Forces in the Middle East
USAFSA	U.S. Army Forces, South Atlantic
USAHS	U.S. Army hospital ship
USFET	U.S. Forces, European Theater
USPHS	U.S. Public Health Service
USSTAF	U.S. Strategic Air Forces
Vet	Veterinary
WAC	Women's Army Corps
WD	War Department
YAK	Russian fighter plane
ZI	Zone of interior

Basic Military Map Symbols*

Basic Medical Symbols

Medical treatment facility, operating [1]	+
Medical treatment facility, not operating [1]	⊞
Medical supply unit	⊕
Veterinary treatment facility, operating [1]	∨
Veterinary treatment facility, not operating [1]	⍌
Hospital train	
Hospital ship	
Other medical units [2]	⊞

Basic Military Symbols

Section	●●
Platoon or detachment	●●●
Company	|
Battalion	| |
Regiment or group; combat team (with abbreviation CT following identifying numeral)	| | |
Division; command of an air force	XX
Corps; Air Force	XXX
Army	XXXX
Service command, department, or section of communications zone	OOO
Communications zone	OOOO

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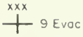
*For complete listing of symbols in use during the World War II period, see FM 21–20, dated October 1943, from which these are taken.

[1] Includes collecting and clearing elements.

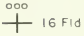
[2] Includes nontreatment facilities, other than supply, such as laboratories and headquarters of various medical facilities.

EXAMPLES

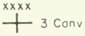
9th Evacuation Hospital, assigned to a corps . . . .



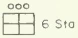
16th Field Hospital, assigned to a service command . . . .



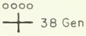
3d Convalescent Hospital, assigned to an army . . . .



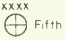
6th Station Hospital, assigned to a base section (not operating).



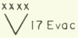
38th General Hospital, assigned to a communications zone . . . .



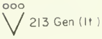
Fifth Army Medical Depot . . . .



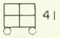
17th Veterinary Evacuation Hospital, assigned to an army . . . .


XXXX
17 Evac

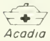
213th Veterinary General Hospital (Italian), assigned to a base section . . . .


OOO
213 Gen (It)

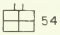
41st Hospital train . . . .



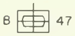
Hospital ship *Acadia* . . . .



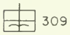
54th Medical Battalion . . . .



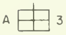
Company B, 47th Armored Medical Battalion . . . .



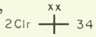
309th Airborne Medical Company . . . .



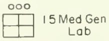
Company A, 3d Medical Battalion . . . .



Clearing Station, 34th Division (2d platoon, clearing company, organic Medical battalion) . . . .



15th Medical General Laboratory, assigned to a base section . .


OOO
15 Med Gen
Lab

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